

SIEMENS



Siemens Componenten Service

Passieve Componenten en Buizen
Elektromechanische Componenten

Voorkeurtypen, April 1991

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Siemens Componenten Service

**Passieve Componenten en Buizen
Elektromechanische Componenten**

**Voorkeurtypen
April 1991**

Signs

- Ø Diameter
- Components subject to export licensing (COCOM EMBARGO)
- Components subject to US-reexport licensing
- ⦿ Components subject to export (COCOM EMBARGO) and US-reexport licensing
- ▼ Newly included components
- ▽ Components subject to slight variations, e.g. a new revision status (★★★ -B instead of ★★★ -A) or taped instead of untaped mode of delivery; the components are interchangeable with the previous types.
- Components not for new design
- MIL approved types
- ★ Variable digit
- + Variable letter
- ® Registered trademark

All dimensions are given in mm, unless otherwise specified.
The commas used in the numerical values denote decimal points.
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Voorkeurprogramma

Dit boek bevat het voorkeurprogramma uit het Siemens componenten-assortiment. Deze typen zijn grotendeels uit voorraad leverbaar bij onderstaande distributeurs.

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7480 AD HAAKSBERGEN
Telefoon: 05427-33333
Fax: 05427-33888
Telex: 44808
Gehele programma

Malchus B.V.

Fokkerstraat 511-513
Postbus 48
3100 AA SCHIEDAM
Telefoon: 010-4277777
Fax: 010-4154466
IC's
Power Elektronica
In/output componenten

Vekano B.V.

Gulberg 35
5674 TE NUENEN
Telefoon: 040-835835
Fax: 040-833425
Telex: 51804
Standaard componenten

Elektronika 2000 B.V.

Chrysantenstraat 4
1031 HT AMSTERDAM
Telefoon: 020-360901
Fax: 020-325111
Special voor
prototypen
SMD-componenten
Voor service-doeleinden

Elincom B.V.

Diodeweg 2
9503 GV STADSKANAAL
Telefoon: 05990-14830
Fax: 05990-20360
Telex: 53378
Relais
Actieve/Passieve
componenten

Prijzen van aantallen boven de in dit boek aangegeven maximum bestelaantallen kunt u ook aanvragen bij:

Siemens Nederland N.V.
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2500 BB DEN HAAG
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SCS: Close ● Fast ● Individual

The SCS Catalog covers products from Siemens AG and the following subsidiaries:
Vacuumschmelze GmbH, Hanau,
Siemens Matsushita Components GmbH & Co. KG, Munich,
Potter & Brumfield, USA.

Here you will find the current preferred products from our extensive range of passive components and electron tubes plus electromechanical components, together with all the extra information that you need, like product specs, prices and quantities.

Our speed-delivery warehouses are in direct contact with our sales offices.

The preferred types listed here are delivered straight from the SCS warehouses as long as the quantity ordered is not more than twice the last staggered figure; with taped components one packing unit can be supplied from the SCS warehouses in each case.

Larger quantities of our products and non-SCS types will be supplied from the manufacturing plants. Inquire for prices and delivery schedules.

Whatever you want – just ask and we will respond immediately.

Technical details and documentation concerning all products can be ordered in the same way as the components themselves.

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Further technical literature

Storage chokes	Ordering no.	Z 019; PB 310-1 ... 6
Thyristor firing transformers	Ordering no.	PB 210-1 ... 2
Current transformers	Ordering no.	PB 161-1
Current sensors	Ordering no.	PB 151-1 ... 2
Flatpack mains transformers	Ordering no.	Z 009

These publications as well as detailed technical data can be obtained from
 Vacuumschmelze GmbH, P.O.B. 2253, W-6450 Hanau 1

Symbols and terms

I_R	Rated direct current
$I_{I rms}$	Primary alternating current
$I_{II rms}$	Secondary alternating current
L	Inductance at I_R ($f = 10$ kHz)
P_R	Rated power (at 50 Hz)
V_{is}	Max. permissible continuous voltage between separate windings (VDE 0550, part 1)
V_R sec.	Rated voltage, secondary
V_p	Voltage (rms) applied between primary and secondary connections during final test. As specified in VDE 0550, part 1, a second test of the same duration but with a 20% lower test voltage is permissible.
$\ddot{u}$	Ratio of turns
$\int v dt$	Minimum value of the voltage-time area measured under unipolar operation and off-load conditions across one of the secondary windings.

Storage Chokes

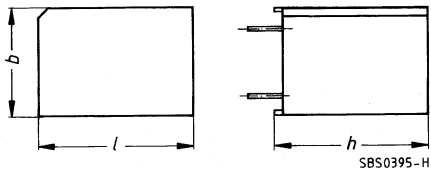
Linear storage chokes

Flatpack or upright design

For switch-mode power supplies based
on the forward converter principle and
for switch-mode down converters
High storage energy and high initial
direct current load

Ambient temperature T_A $-25 \dots +70 \text{ }^\circ\text{C}$ ¹⁾

Schematic representation



Mounting dimensions

Type	$l \times b \times h$ mm	Type	$l \times b \times h$ mm
Flatpack design		Upright design	
ZKB 418/2..	$27,0 \times 29,5 \times 13,5$	ZKB 419/0..	$22,3 \times 13,5 \times 25$
ZKB 422/0..	$32,0 \times 32,0 \times 20,0$	ZKB 419/2..	$27,0 \times 13,5 \times 35$
ZKB 443/0..	$49,0 \times 49,0 \times 35,0$	ZKB 419/4..	$32,0 \times 20,0 \times 35$
ZKB 455/0..	$42,3 \times 42,3 \times 25,0$	ZKB 419/6..	$38,0 \times 20,0 \times 40$
ZKB 461/0..	$22,3 \times 22,3 \times 13,5$		

¹⁾ The ripple of the choke current at $70 \text{ }^\circ\text{C}$ is limited to $0,2 \cdot I_R$.

Storage Chokes

/R	L ¹⁾	Type	Ordering code	Min. qty.	Price each				
					Min. qty. +	25 +	50 +	100 +	250 +
A	μH								
Storage chokes, flatpack design									
0,63	2500	ZKB 461/096-★★-H2	B71757-S461-Z96	10					
1,0	1000	ZKB 461/097-★★-H2	B71757-S461-Z97	10					
1,6	400	ZKB 461/098-★★-H2	B71757-S461-Z98	10					
1,6	1000	ZKB 418/204-★★-H2	B71757-S418-Z204	10					
2,5	160	ZKB 461/099-★★-H2	B71757-S461-Z99	10					
2,5	400	ZKB 418/205-★★-H2	B71757-S418-Z205	10					
2,5	1000	ZKB 422/058-★★-H2	B71757-S422-Z58	10					
3,15	250	ZKB 418/204-★★-H2	B71757-S418-Z204	10					
3,15	630	ZKB 422/059-★★-H2	B71757-S422-Z59	10					
3,15	1600	ZKB 455/049-★★-H2	B71757-S455-Z49	10					
4,0	160	ZKB 418/206-★★-H2	B71757-S418-Z206	10					
4,0	400	ZKB 422/061-★★-H2	B71757-S422-Z61	10					
5,0	100	ZKB 418/205-★★-H2	B71757-S418-Z205	10					
5,0	250	ZKB 422/060-★★-H2	B71757-S422-Z60	10					
5,0	630	ZKB 455/051-★★-H2	B71757-S455-Z51	10					
5,0	1600	ZKB 443/081-★★-H2	B71757-S443-Z81	10					
6,3	160	ZKB 422/059-★★-H2	B71757-S422-Z59	10					
6,3	400	ZKB 455/049-★★-H2	B71757-S455-Z49	10					
8,0	100	ZKB 422/061-★★-H2	B71757-S422-Z61	10					
10,0	63	ZKB 422/060-★★-H2	B71757-S422-Z60	10					
10,0	160	ZKB 455/051-★★-H2	B71757-S455-Z51	10					
10,0	400	ZKB 443/081-★★-H2	B71757-S443-Z81	10					
Storage chokes, upright design									
1,0	1000	ZKB 419/007-★★-H2	B71757-S419-Z007	10					
1,0	2500	ZKB 419/202-★★-H2	B71757-S419-Z202	10					
1,6	400	ZKB 419/009-★★-H2	B71757-S419-Z009	10					
1,6	1000	ZKB 419/204-★★-H2	B71757-S419-Z204	10					
2,5	160	ZKB 419/001-★★-H2	B71757-S419-Z001	10					
2,5	400	ZKB 419/205-★★-H2	B71757-S419-Z205	10					
2,5	1000	ZKB 419/410-★★-H2	B71757-S419-Z410	10					
3,15	250	ZKB 419/204-★★-H2	B71757-S419-Z204	10					
4,0	400	ZKB 419/403-★★-H2	B71757-S419-Z403	10					
4,0	640	ZKB 419/602-★★-H2	B71757-S419-Z602	10					
4,0	960	ZKB 419/406-★★-H2	B71757-S419-Z406	10					

¹⁾ at /R (f = 10 kHz)

Storage Chokes

/R	L ¹⁾	Type	Ordering code	Min. qty.	Price each				
	μH				Min. qty. +	25 +	50 +	100 +	250 +
Storage chokes, upright design									
5,0	100	ZKB 419/205-★★-H2	B71757-S419-Z205	10					
5,0	250	ZKB 419/407-★★-H2	B71757-S419-Z407	10					
6,3	380	ZKB 419/413-★★-H2	B71757-S419-Z413	10					
8,0	100	ZKB 419/403-★★-H2	B71757-S419-Z403	10					
8,0	160	ZKB 419/602-★★-H2	B71757-S419-Z602	10					
8,0	240	ZKB 419/406-★★-H2	B71757-S419-Z406	10					
10,0	63	ZKB 419/407-★★-H2	B71757-S419-Z407	10					
12,5	95	ZKB 419/413-★★-H2	B71757-S419-Z413	10					

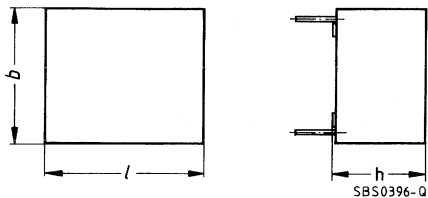
¹⁾ at /R(f = 10 kHz)

Thyristor Firing Transformers

Firing transformers are used for driving semiconductor components (thyristors, triacs). They ensure reliable dc isolation between control and load circuit.

Temperature range	– 40 ... + 85 °C – 25 ... + 100 °C (for ZKB 472)
DIN climatic category	GPF HME (for ZKB 472)

Schematic representation



Mounting dimensions

Type	$l \times b \times h$ mm
ZKB 404/...	12,3 × 12,3 × 8,5
ZKB 409/...	17,5 × 15,0 × 10,5
ZKB 418/...	27,0 × 29,5 × 20,0
ZKB 421/...	19,8 × 19,8 × 13,5
ZKB 461/...	22,3 × 22,3 × 13,5
ZKB 472/...	17,8 × 17,0 × 13,5
ZKB 475/...	35,8 × 34,0 × 25,3

Thyristor Firing Transformers

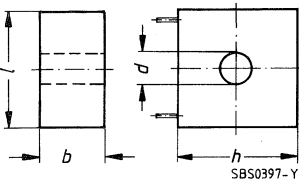
Ü	jvdt	Type	Ordering code	Min. qty.	Price each				
	µ Vs				Min. qty. +	25 +	50 +	100 +	250 +
V _{is} = 380 V, V _p = 3,1 kV									
1:1	100	ZKB 409/017-★★-PF	B71857-J409-Z17	10					
1:1	200	ZKB 409/018-★★-PF	B71857-J409-Z18	10					
1:1	500	ZKB 421/096-★★-PF	B71857-J421-Z96	10					
1:1:1	100	ZKB 409/019-★★-PF	B71857-J409-Z19	10					
1:1:1	200	ZKB 409/020-★★-PF	B71857-J409-Z20	10					
1:1:1	500	ZKB 421/097-★★-PF	B71857-J421-Z97	10					
1:1:1	1000	ZKB 418/080-★★-PF	B71857-J418-Z80	10					
V _{is} = 380 V, V _p = 3,1 kV; low primary-to-secondary winding capacitance									
2:1	200	ZKB 409/006-★★-PF	B71857-J409-Z6	10					
1:1:1	50	ZKB 404/079-★★-PF	B71857-J404-Z79	10					
V _{is} = 500 V, V _p = 3,1 kV									
1:1	250	ZKB 472/103-★★-W	B71857-J472-Z103	10					
1:1	500	ZKB 472/102-★★-W	B71857-J472-Z102	10					
2:1	250	ZKB 472/105-★★-W	B71857-J472-Z105	10					
1:1:1	250	ZKB 472/101-★★-W	B71857-J472-Z101	10					
1:1:1	250	ZKB 472/104-★★-W	B71857-J472-Z104	10					
1:1:1	500	ZKB 472/106-★★-W	B71857-J472-Z106	10					
V _{is} = 500 V, V _p = 4,5 kV									
1:1	500	ZKB 461/002-★★-PF	B71857-J461-Z2	10					
1:1:1	200	ZKB 461/003-★★-PF	B71857-J461-Z3	10					
1:1:1	500	ZKB 418/127-★★-PF	B71857-J418-Z127	10					
1:1:1	1000	ZKB 418/104-★★-PF	B71857-J418-Z104	10					
V _{is} = 750 V, V _p = 5 kV; for long pulses (with double shielding)									
2:1	5000	ZKB 475/012-★★-N2	B71857-J475-Z12	10					

Current Transformers

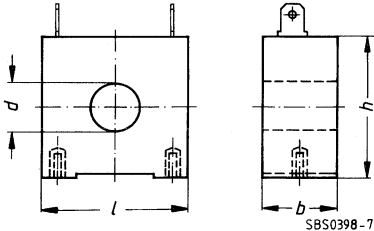
Current transformers with lead-through bushing For monitoring and control of sinusoidal currents at mains frequency (50/60 Hz)

Ambient temperature T_a - 20 ... + 70 °C
DIN climatic category GKF

ZKB 465/401



ZKB 465/501, ZKB 465/601



Mounting dimensions

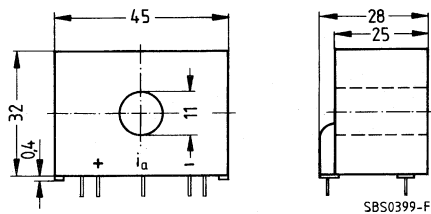
Type	$l \times b \times h$ mm	Lead-through bushing d mm
ZKB 465/401	$32 \times 16,5 \times 32$	≥ 9
ZKB 465/501	$38 \times 20,0 \times 38$	13
ZKB 465/601	$50 \times 32,0 \times 50$	18

$I_{I rms}$	$I_{II rms}$	Type	Ordering code	Min. qty.	Price each				
A	mA				Min. qty. +	25 +	50 +	100 +	250 +
25	19	ZKB 465/401-★★-N2	B71957-B465-Z401	10					
50	50	ZKB 465/501-★★-N2	B71957-B465-Z501	10					
100	100	ZKB 465/601-★★-N2	B71957-B465-Z601	10					

Current Sensors

New current sensor type with soft-magnetic field probe for potential-free measuring or sensing of currents

Rated current i_{IRms}	100 A
Rated output current i_{ORms}	100 mA
Supply voltage $\pm V_{op}$	$15 \pm 5\% V$
Frequency range f	DC ... 300 kHz
Measuring accuracy at RT F_i	$\leq 1\%$
Linearity F_L	$\leq 0,1\%$
Ambient temperature T_A	$-25 \dots +75\text{ }^\circ\text{C}$



Dimensions in mm

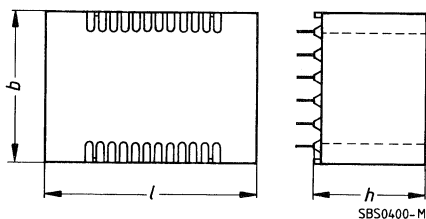
Type	Ordering code	Min. qty.	Price each				
			Min. qty. +	25 +	50 +	100 +	250 +
ZKB 464/400	B71958-A464-X400	10					

Flatpack Mains Transformers

Mains transformers of compact design
Molded encapsulation; with VDE approval
For the power supply of individual PC boards
or small modules as used in equipment or de-
centralized power supply units

Rated voltage V_R primary 220 V
 Ambient temperature T_A $-55 \dots +60 \text{ }^\circ\text{C}$

Schematic representation



Mounting dimensions

Type	$l \times b \times h$ (mm)
TFB 467/...	$37,5 \times 28 \times 20$
TFB 468/...	$48,0 \times 36 \times 25$
TFB 469/...	$61,0 \times 43 \times 30$

V_R sec. V	P_R (50 Hz) VA	Type	Ordering code	Min. qty.	Price each				
					Min. qty. +	25 +	50 +	100 +	250 +
2×6 2×12	1,6	TFB 467/010-★★-N2	B71657-A467-T10	10					
	1,6	TFB 467/012-★★-N2	B71657-A467-T12	10					
2×6 2×12 2×16	5,0	TFB 468/010-★★-N2	B71657-A468-T10	10					
	5,0	TFB 468/012-★★-N2	B71657-A468-T12	10					
	5,0	TFB 468/013-★★-N2	B71657-A468-T13	10					
2×6 2×8 2×12 2×16 2×20	12,5	TFB 469/010-★★-N2	B71657-A469-T10	10					
	12,5	TFB 469/011-★★-N2	B71657-A469-T11	10					
	12,5	TFB 469/012-★★-N2	B71657-A469-T12	10					
	12,5	TFB 469/013-★★-N2	B71657-A469-T13	10					
	12,5	TFB 469/014-★★-N2	B71657-A469-T14	10					

Ferrites and Accessories (SIFERRIT)

Contents	Type	Page
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P core halves	5,6 × 3,7 ... 47 × 14,9	66
EP cores	EP 7 ... EP 20	69
ETD cores	ETD 29 ... ETD 49	75
EFD cores	EFD 15 ... EFD 3082	82
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ER cores	ER 42	90
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▼ Newly included in this edition

RM cores:
 Coil formers for SMPS transformers with line isolation (RM 6, RM 8)
 Coil former with 8 pins for RM 6
 Additional accessories for SMD sets

P cores:
 Coil formers with pins and with clamps
 for P 9 × 5, P 11 × 7, P 14 × 8 and P 18 × 11
 P 9 × 5 cores without center hole

EFD cores:
 Cores and accessories
 EFD 15
 EFD 20
 EFD 25
 EFD 30

E 6,3: Additional cover cap for SMD set
 ETD 29: Coil former with vertical magn. axis

Further technical literature

Data Book "Ferrites and Accessories", B5-P6115-X-X-7600
 Short Form Catalog "Ferrites and Accessories", B5-P6119-X-X-7400
 Data Sheet Collection "Ferrites and Accessories for SMD Sets and SMD Transformers",
 B5-P6123-X-X-7600

Material properties

			Standard materials					
Preferred application			Resonant circuit inductors			Broadband transformers		
Material			K 1	M 33	N 48	N 26	N 30	T 35
Initial permeability	Symbol	Unit	80 ± 20 %	750 ²⁾ ± 20 %	2000 ± 20 %	2300 ± 20 %	4300 ± 20 %	6000 ± 20 %
	μ_i							
Flux density at $H = 3000 \text{ A/m}$	B	mT	360	450	390	390	380	380
Coercive field strength	H_c	A/m	500	100	20	20	13	6
Optimum frequency range	$f_{\min.}$	MHz	1,5	0,2	0,001	—	—	—
	$f_{\max.}$	MHz	12	1,0	0,1	—	—	—
Rel. loss factor at $f_{\min.}$ at $f_{\max.}$	$\frac{\tan \delta}{\mu_i}$	10^{-6}	< 40 < 100	< 12 < 20	< 0,5 < 2,5	— < 5 ³⁾	—	—
Hysteresis material constant	η_B	$\frac{10^{-6} \cdot 1}{\text{mT}}$	< 36	< 1,8	< 0,4	< 1,5	< 1,1	< 1,1
Curie temperature	T_C	°C	> 400	> 200	> 150	> 150	> 130	> 130
Rel. temperature coefficient at 20 ... 55 °C at 20 ... 5 °C at 20 ... - 25 °C	α_F	$10^{-6}/\text{K}$	2 ... 6	0,5 ... 2,3	0,4 ... 1,0	0 ... 1,5	—	—
			1 ... 5	0,5 ... 2,5	0,4 ... 1,0	0 ... 2	—	—
			1 ... 5	0,5 ... 3,0	0,4 ... 1,5	—	—	—
Mean value of α_F at 20 ... 55 °C		$10^{-6}/\text{K}$	4	1,6	0,7	—	1	0,7
Density		kg/m ³	4400	4500	4700	4700	4800	4900
Disaccommodation factor at 60 °C at 20 °C	DF	10^{-6}	< 35 20	< 12 8	< 4 2	— —	— —	— —
Resistivity	ρ	Ωm	10^5	5	3	2	0,5	0,2
Core shapes			RM, P Ring Double- aperture Cylinder Tube Screw	RM, P P core halves Ring Cylinder Tube Screw	RM P	RM P EP Q	RM, P EP Q E Ring Double- aperture	RM P EP Ring

R10 ring cores were used to determine these values, which are referred to room temperature unless otherwise specified.

- 1) Perminvar ferrite; irreversible variations in quality and permeability may occur in case of strong fields in the core (approx. > 1500 A/m).
- 2) For screw cores $\mu_i = 600 \pm 20 \%$
- 3) At 100 kHz

							Special materials			
	Power transformers						Resonant c. inductors		Special applications	
T38	N 47	N 49	N 27	N 67	N 87	N 41	U 17 ¹⁾	K 12	N 22	
10000 ± 30 %	1400 ± 20 %	1400 ± 20 %	2000 ± 20 %	2300 ± 25 %	2300 ± 25 %	3000 ± 20 %	10 ± 20 %	26 ± 25 %	2000 ± 25 %	2300 ± 25 %
380	430	430	510	510	510	510	—	145	390	
4	35	35	20	18	18	20	1500	1200	30	
—	0,2	0,3	—	—	—	—	10	3	0,001	
—	1,0	1,0	0,15	0,3	0,5	0,15	220	40	0,2	
—	—	—	—	—	—	—	< 100	< 150	< 2	
—	—	—	—	—	—	—	< 1700	< 600	< 20	
< 1,4	< 0,8	< 0,8	< 1,5	< 1,4	< 1,4	< 1,4	< 27	< 45	< 1,4	
> 130	> 200	> 200	> 220	> 220	> 220	> 220	> 550	> 450	> 145	
—	—	—	—	—	—	—	—	3 ... 14	0,4 ... 1,6	
—	—	—	—	—	—	—	—	— 0,5 ... 12	0,4 ... 1,8	
—	—	—	—	—	—	—	—	— 1 ... 12	0,7 ... 2,3	
0,5	1	3	3	4	4	4	40	10	0,9	
4900	4700	4700	4800	4800	4800	4800	4300	4300	4700	
—	—	—	—	—	—	—	—	< 50	< 7	
—	—	—	—	—	—	—	—	—	4	
0,1	20	25	3	8	8	2	10 ⁵	10 ⁵	1	
RM P EP Q E Ring	RM Ring Q	EFD	PM P ETD, EC ER, E, U Ring Welding rods	RM, P EP ETD ER E Ring	EFD	RM P E	P Double- aperture	P	Shield- ing beads	P core halves (for proximity switches)

The range of preferred ferrite products presented on the following pages does not include all core shapes listed in the above table.

Symbols and terms

$\Sigma l/A$	Magnetic core factor
A_e	Effective cross-sectional area
A_L	Inductance factor $A_L = L/N^2$
$A_{\min}$	Min. cross-sectional area of the core
A_N	Cross-sectional area of the winding
l_e	Effective magnetic length
Dimension "g"	Air gap
V_e	Effective magnetic volume

Adjusting Screw Drivers

For P and RM core sets

Figure 1

Plastic screw driver suitable for adjusting screws fitting core sets P 22 × 13 to P 36 × 22 as well as RM 8 and RM 10.

Figure 2

Double-ended plastic screw driver. The thin end is suitable for adjusting screws fitting core sets P 9 × 5 and P 11 × 7 as well as RM 4 and RM 5. The thick end is suitable for adjusting screws fitting core sets P 14 × 8 and P 18 × 11 as well as RM 6.

Figure 3

Plastic screw driver suitable for adjusting screws fitting core sets P 4,6 × 4,1 and P 7 × 4.

Figure 1

Figure 2

Figure 3

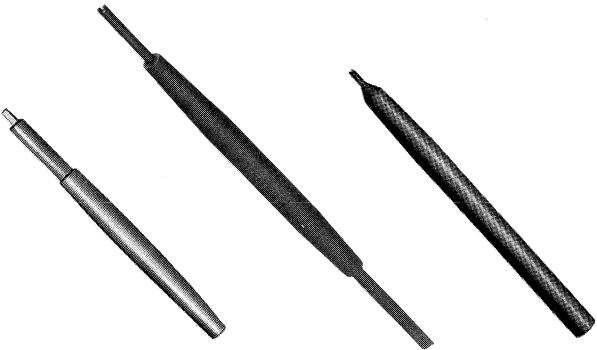
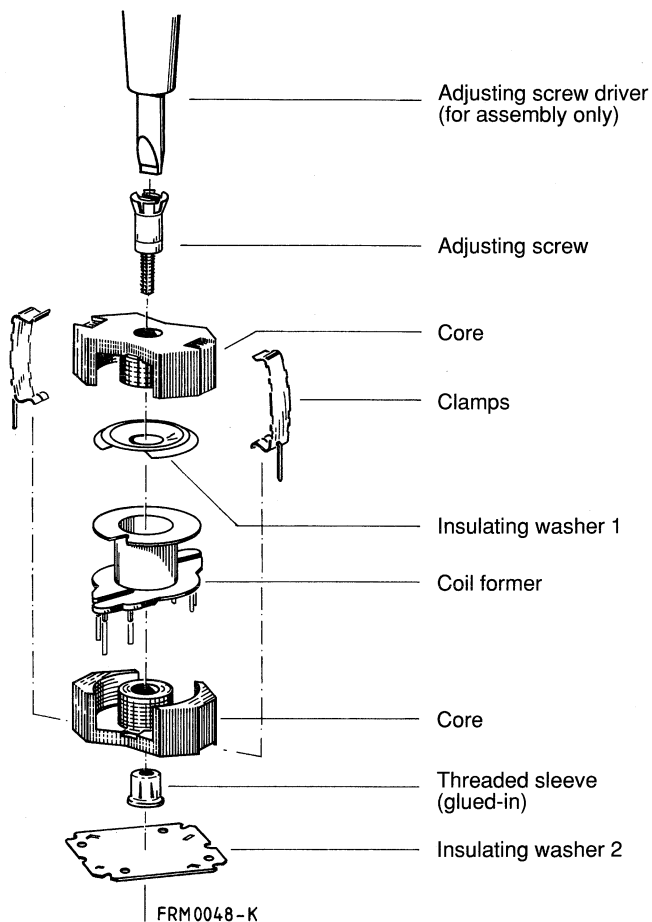


Figure	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
1	B63399-B1	25					
2	B63399-B4	25					
3	B63399-A1007	25					

RM Cores

Example of an assembly set



Mounting dimensions of the assembly set (mm)

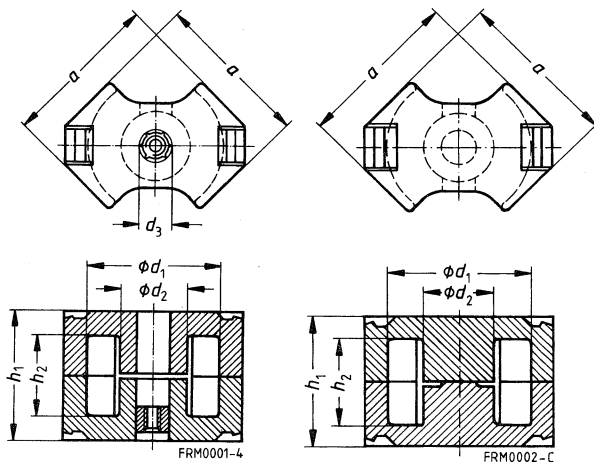
Core type	Base area × height ¹⁾	Special features	Core type	Base area × height ¹⁾	Special features
RM 4	10,16 ² × 10,8		RM 10	25,4 ² × 19 31 × 40 × 19	for power appl.
RM 5	12,7 ² × 10,8 16,5 × 19,1 × 10,6	SMD	RM 12	30,48 ² × 24,9 32 × 45,7 × 24,9 40,3 × 35,6 × 31	for power appl. with pile-up coil former
RM 6	15,24 ² × 12,8 19,5 × 25 × 12,8 19,8 × 22 × 13	for power appl. SMD	RM 14	35,56 ² × 29,3 44 × 29 × 29,3	for power appl.
RM 8	20,32 ² × 16,8 26 × 30 × 16,8	for power appl.			

1) Height above mounting plane

RM Cores

RM cores for high packing densities. Application in filter inductors, low-distortion small-signal broadband transformers and increasingly in power electronics. RM 8 to RM 14 are available with tapered centerpost for use in non-linear chokes.

Futhermore we supply an extensive range of accessories (also for automatic processing) for all core sizes.



RM 8 to RM 14 core sets for non-linear chokes

Dimensions (mm)

Core type	a	$\varnothing d_1$	$\varnothing d_2$	d_3	h_1	h_2
RM 4	9,8 – 0,4	7,95 + 0,4	3,9 – 0,2	2,0 + 0,1	10,5 – 0,2	7,0 + 0,4
RM 5	12,3 – 0,5	10,2 + 0,4	4,9 – 0,2	2,0 + 0,1	10,5 – 0,2	6,3 + 0,4
RM 6	14,7 – 0,6	12,4 + 0,5	6,4 – 0,2	3,0 + 0,1	12,5 – 0,2	8,0 + 0,4
RM 8	19,7 – 0,8	17,0 + 0,6	8,55 – 0,3	4,4 + 0,2	16,5 – 0,2	10,8 + 0,4
RM 10	24,7 – 1,1	21,2 + 0,9	10,9 – 0,4	5,4 + 0,2	18,7 – 0,2	12,4 + 0,6
RM 12	29,8 – 1,2	24,9 + 1,1	12,8 – 0,4	–	24,6 – 0,2	16,8 + 0,6
RM 14	34,8 – 1,3	29,0 + 1,0	15,0 – 0,5	–	30,2 – 0,2	20,8 + 0,6

Magnetic characteristics and weight (per set)

Core type	Magnetic characteristics with center hole / without center hole					Approx. weight with/without center hole g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
RM 4	1,9 / 1,7	21,0/22,0	11,0/ 13,0	– / 11,3	232/ 286	1,45/ 1,65
RM 5	1,0 / 0,93	20,8/22,1	20,8/ 23,8	15 / 18	430/ 526	3,1 / 3,3
RM 6	0,86/0,78	26,9/28,6	31,3/ 36,6	– / 31	840/ 1050	4,7 / 5,1
RM 8	0,67/0,59	35,1/38	52 / 64	– / 55	1840/ 2430	10,3 / 12
RM 10	0,50/0,45	42,0/44	83 / 98	– / 90	3470/ 4310	20 / 22
RM 12	– / 0,39	– / 57	– / 146	– / 125	– / 8340	– / 44
RM 14	– / 0,35	– / 70	– / 200	– / 170	– / 14000	– / 72

RM 4

Core sets in accordance with IEC 431 and DIN 41 980

B 65 803

Item	Rated Al. value nH	Material	Ordering code -N (with threaded sleeve) -J (w/o center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	63	M33	B65803-N63-A33	20					
2	100	N48	B65803-N100-A48	20					
3	160	N48	B65803-N160-A48	20					
4	1100 ¹⁾	N67	B65803-J-R67	20					
5	1900 ¹⁾	N30	B65803-J-R30	20					
6	3700 ¹⁾	T38	B65803-J-Y38	20					

Coil former made of GFR thermosetting plastic (UL 94 V-0)

B 65 804

Sections	An mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
1	7,7	6	B65804-J1006-D1	20					

Clamp with ground terminal

B 65 806

		Min. qty.	Min. qty. +	100 +	250 +	500 +	1000 +
(required: 2 pcs/set)	B65806-A2203	40					

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 804

		Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former for double-clad PCBs	B65804-A5000 B65804-C2005	20 20					

Adjusting screws for core sets (with color code)

B 65 539

for item 1, 2	yellow	B65539-C1003-X1	20				
for item 3	red	B65539-C1002-X22	20				

¹⁾ Ungapped

Core sets in accordance with IEC 431 and DIN 41 980

B 65 805

Item	Rated AL value nH	Material	Ordering code -C (with center hole) -N (with threaded sleeve) -J (w/o center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	25	K1	B65805-N25-A1	20					
2	40	K1	B65805-N40-A1	20					
3	63	M33	B65805-N63-A33	20					
4	100	M33	B65805-N100-A33	20					
5	125	N48	B65805-N125-G48	20					
6	160	N48	B65805-N160-A48	20					
7	250	N48	B65805-N250-A48	20					
8	315	N48	B65805-N315-A48	20					
9	1400 ¹⁾	N47	B65805-J-R47	20					
10	1800 ¹⁾	N26	B65805-C-R26	20					
11	2000 ¹⁾	N67	B65805-J-R67	20					
12	3500 ¹⁾	N30	B65805-J-R30	20					
13	5200 ¹⁾	T35	B65805-J-R35	20					
14	6700 ¹⁾	T38	B65805-J-Y38	20					
15	6700 ¹⁾	T38	B65805-J6700-U638	20					

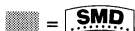
Coil formers

B 65 806, B 65 822

Sections	AN	Pins/ termi- nals	Ordering code	Min. qty.	Price each				
	mm²				Min. qty. +	50 +	100 +	250 +	500 +
Made of GFR thermosetting plastic (UL 94 V-0)									
1	9,5	4	B65806-J1004-D1	20					
		5	B65806-J1005-D1	20					
		6	B65806-J1006-D1	20					
2	8,7	4	B65806-J1004-D2	20					
		6	B65806-J1006-D2	20					

Made of liquid crystal polymer (UL 94 V-0) for SMD technology

1	11,2	8	B65822-D1008-T1	20					
2	10,1	8	B65822-D1008-T2	20					



1) Ungapped

Clamps
B 65 806

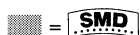
	Ordering code	Min. qty.	Price each				
			Min. qty. +	100 +	250 +	500 +	1000 +
With ground terminal							
(required: 2 pcs/set)	B65806-A2203	40					
Without ground terminal for SMD technology							
(required: 2 pcs/set)	B65806-J2204	40					

Insulating washers made of polycarbonate (UL 94 V-0)
B 65 806

		Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former	B65806-A5000	20					
for double-clad PCBs	B65806-D2005	20					

Adjusting screws for core sets (with color code)
B 65 539, B 65 806

for item 1	black	B65539-C1003-X101	20				
for item 2, 4, 5	yellow	B65539-C1003-X1	20				
for item 3	white	B65539-C1002-X101	20				
for item 6	red	B65539-C1002-X22	20				
for item 7, 8	green	B65806-C3001-X22	20				
for item 8	blue	B65806-A3002-X22	20				



Core sets in accordance with IEC 431 and DIN 41 980

B 65 807

Item	Rated AL value nH	Material	Ordering code -C (with center hole) -N (with threaded sleeve) -J (w/o center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	40	K1	B65807-N40-A1	20					
2	63	M33	B65807-N63-A33	20					
3	100	M33	B65807-N100-A33	20					
4	160	N48	B65807-N160-G48	20					
5	250	N48	B65807-N250-A48	20					
6	315	N48	B65807-N315-A48	20					
7	400	N48	B65807-N400-A48	20					
▽ 8	1000	N26	B65807-C1000-L26	20					
9	1700 ¹⁾	N47	B65807-J-R47	20					
10	2200 ¹⁾	N26	B65807-C-R26	20					
11	2400 ¹⁾	N67	B65807-J-R67	20					
12	4300 ¹⁾	N30	B65807-J-R30	20					
13	6200 ¹⁾	T35	B65807-J-R35	20					
14	8600 ¹⁾	T38	B65807-J-Y38	20					
15	8600 ¹⁾	T38	B65807-J8600-U638	20					

Coil formers

B 65 808, B 65 821

Sections	A _N mm ²	Pins/ termi- nals	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR thermosetting plastic (UL 94 V-0)

▽ 1	15	4	B65808-J1004-D1	20					
		5	B65808-J1005-D1	20					
		6	B65808-J1006-D1	20					
		8	B65808-J1008-D1	20					
2	14	4	B65808-J1004-D2	20					
		6	B65808-J1006-D2	20					

Made of GFR polyterephthalate (UL 94 V-0) for power applications

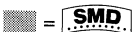
1	15	8	B65808-B1508-T1	20					
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Made of GFR thermosetting plastic (UL 94 V-0) for SMPS transformers with line isolation

▽ 2	14	8	B65808-X1108-D2	20					
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Made of liquid crystal polymer (UL 94 V-0) for SMD technology

▽ 1	17	8	B65821-B1008-T1	20					
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1) Ungapped

Clamps
B 65 808

	Ordering code	Min. qty.	Price each				
			Min. qty. +	100 +	250 +	500 +	1000 +

With ground terminal

(required: 2 pcs/set)	B65808-A2203	40					
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Without ground terminal for SMD technology

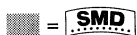
▼ (required: 2 pcs/set)	B65808-J2204	40					
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Insulating washers made of polycarbonate (UL 94 V-0)
B 65 808

		Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former for double-clad PCBs	B65808-A5000	20					
	B65808-C2005	20					

Adjusting screws for core sets (with color code)
B 65 659

for item 1, 2	white	B65659-F1-X101	20				
for item 3	brown	B65659-F4-X101	20				
for item 4	green	B65659-F1-X1	20				
for item 5	red	B65659-F1-X23	20				
for item 6	black	B65659-F3-X23	20				
for item 7	yellow	B65659-F4-X23	20				



Core sets
B 65 811

Item	Rated Al. value	Material	Ordering code -D (with center hole) -F (with threaded sleeve) -J (w/o center hole)	Min. qty. (sets)	Price per set				
	nH				Min. qty. +	50 +	100 +	250 +	500 +

In accordance with IEC 431

1	250	N48	B65811-F250-A48	10					
2	315	N48	B65811-F315-A48	10					
3	400	N48	B65811-F400-A48	10					
4	630	N48	B65811-F630-J48	10					
5	250	N41	B65811-J250-J41	10					
6	1600	N41	B65811-J1600-K41	10					
7	2400 ¹⁾	N47	B65811-J-R47	10					
8	2900 ¹⁾	N26	B65811-D-R26	10					
9	3300 ¹⁾	N67	B65811-J-R67	10					
10	5700 ¹⁾	N30	B65811-J-R30	10					
11	12500 ¹⁾	T38	B65811-J-Y38	10					

For non-linear chokes

12	2500 ¹⁾	N41	B65811-H2500-X41	10					
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Coil formers
B 65 812

Sections	A _N	Pins	Ordering code	Min. qty.	Price each				
	mm ²				Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR thermosetting plastic (UL 94 V-0)

1	30	5	B65812-J1005-D1	10					
		8	B65812-J1008-D1	10					
		12	B65812-J1012-D1	10					
2	28,4	5	B65812-J1005-D2	10					
		8	B65812-J1008-D2	10					
		12	B65812-J1012-D2	10					

Made of GFR polyterephthalate (UL 94 V-0) for power applications

1	30	12	B65812-B1512-T1	10					
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Made of GFR thermosetting plastic (UL 94 V-0) for SMPS transformers with line isolation

▼ 2	28,4	8	B65812-X1108-D2	20					
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Clamp with ground terminal
B 65 812

		Min. qty.	Min. qty. +	100 +	250 +	500 +	1000 +
(required: 2 pcs/set)	B65812-A2203	20					

1) Ungapped

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 812

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former for double-clad PCBs	B65812-A5000	10					
	B65812-C2005	10					

Adjusting screws for core sets (with color code)

B 65 812

for item 1	white	B65812-B3001-X101	10					
for item 2	grey	B65812-B3003-X22	10					
for item 3	brown	B65812-B3002-X22	10					
for item 4	black	B65812-B3001-X22	10					

Core sets
B 65 813

Item	Rated AL value nH	Material	Ordering code -N (with threaded sleeve) -J (w/o center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +

In accordance with IEC 431 and DIN 41 980

1	400	N48	B65813-N400-A48	10					
2	630	N48	B65813-N630-A48	10					
3	250	N41	B65813-J250-A41	10					
4	630	N41	B65813-J630-J41	10					
5	3100 ¹⁾	N47	B65813-J-R47	10					
6	4200 ¹⁾	N67	B65813-J-R67	10					
7	7600 ¹⁾	N30	B65813-J-R30	10					
8	11000 ¹⁾	T35	B65813-J-R35	10					
9	16000 ¹⁾	T38	B65813-J-Y38	10					

For non-linear chokes

10	3200 ¹⁾	N41	B65813-H3200-X41	10					
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Coil formers
B 65 814

Sections	AN mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR thermosetting plastic (UL 94 V-0)

1	41,5	11	B65814-J1011-D1	10					
1	41,5	12	B65814-J1012-D1	10					
2	39	12	B65814-J1012-D2	10					

Made of GFR polyterephthalate (UL 94 V-0) for power applications

1	41,5	12	B65814-B1512-T1	10					
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Made of GFR polyterephthalate (UL 94 V-0) for non-linear chokes

1	41,5	—	B65814-J1000-T1	10					
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Clamp with ground terminal
B 65 814

		Min. qty.	Min. qty. +	100 +	250 +	500 +	1000 +
(required: 2 pcs/set)	B65814-A2203	20					

1) Ungapped

Insulating washers made of polycarbonate (UL 94 V-0)**B 65 814**

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former for double-clad PCBs	B65814-B5000	10					
	B65814-B2005	10					

Adjusting screws for core sets (with color code)**B 65 679**

for item 1	black	B65679-E2-X22	10					
for item 2	white	B65679-E1-X22	10					

Core sets
B 65 815

Item	Rated AL value	Material	Ordering code	Min. qty. (sets)	Price per set				
	nH				Min. qty. +	50 +	100 +	250 +	500 +

Preferable for power applications

1	160	N41	B65815-E160-A41	10					
2	250	N41	B65815-E250-A41	10					
3	1000	N41	B65815-E1000-J41	10					
4	5300 ¹⁾	N67	B65815-E-R67	10					
5	8400 ¹⁾	N30	B65815-E-R30	10					

For non-linear chokes

6	3700 ¹⁾	N41	B65815-H3700-X41	10					
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Coil formers
B 65 816

Sections	A _N	Pins	Ordering code	Min. qty.	Price each				
	mm ²				Min. qty. +	50 +	100 +	250 +	500 +

a) Made of GFR thermosetting plastic (UL 94 V-0)

1	73	11	B65816-A1011-D1	10					
		12	B65816-A1012-D1	10					

b) Made of GFR polyterephthalate (UL 94 V-0) for power applications

1	72	12	B65816-B1512-T1	10					
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c) Made of GFR polyterephthalate (UL 94 V-0) for non-linear chokes

1	70,5	—	B65816-J1000-T1	10					
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Pile-up coil former made of GFR polyterephthalate (UL 94 V-0) for power applications

Winding former/ Sections	A _N mm ²	Pins							
I/1	3,6								
I/2	26,0	12	B65816-A1212-T102	10					
II/1	2,9								
II/2	4,0								

¹⁾ Ungapped

Clamps

B 65 816

	Ordering code	Min. qty.	Price each				
			Min. qty. +	100 +	250 +	500 +	1000 +
With ground terminal for coil formers a) to c)							
(required: 2 pcs/set)	B65816-A2002	20					
Without ground terminal for pile-up coil former							
(required: 2 pcs/set)	B65816-A2204	20					

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 816

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former for double-clad PCBs	B65816-B5000	10					
	B65816-D2005	10					

Core sets
B 65 887

Item	Rated AL value nH	Material	Ordering code -E (w/o center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	20 +	50 +	100 +	250 +

Preferable for power applications

1	160	N41	B65887-E160-A41	10					
2	250	N41	B65887-E250-A41	10					
3	400	N41	B65887-E400-A41	10					
4	6000 ¹⁾	N67	B65887-E-R67	10					
5	9500 ¹⁾	N30	B65887-E-R30	10					

For non-linear chokes

6	4300 ¹⁾	N41	B65887-H4300-X41	10					
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Coil formers
B 65 888

Sections	A _N mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	20 +	50 +	100 +	250 +

Made of GFR thermosetting plastic (UL 94 V-0)

1	107	10	B65888-B1001-D1	10					
1	107	12	B65888-B1002-D1	10					

Made of GFR polyterephthalate (UL 94 V-0) for power applications

1	106	12	B65888-B1512-T1	10					
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Insulating washers made of polycarbonate (UL 94 V-0)
B 65 888

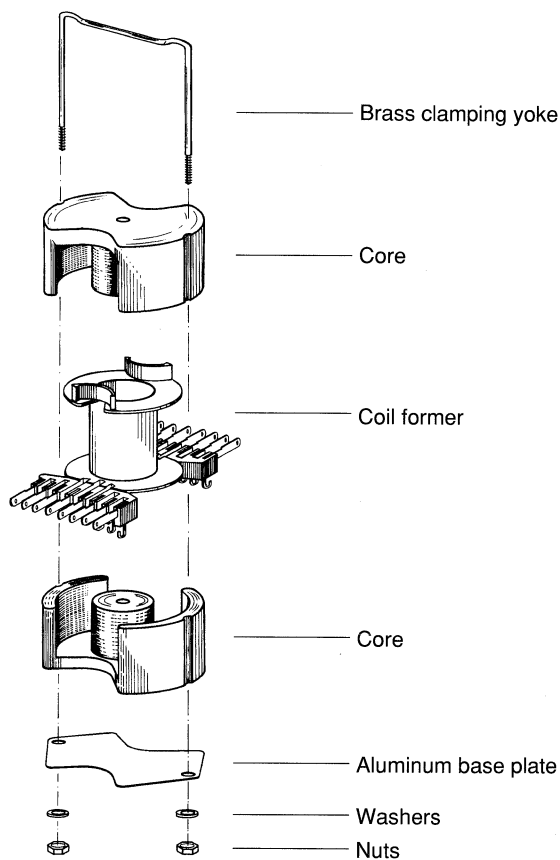
	Ordering code	Min. qty.	Price each				
			Min. qty. +	20 +	50 +	100 +	250 +
between core/coil former for double-clad PCBs	B65888-B5000	10					
	B65888-B2005	10					

Clamp with ground terminal
B 65 888

		Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
(required: 2 pcs/set)	B65888-A2002	20					

¹⁾ Ungapped

Example of an assembly set



FPM0002-6

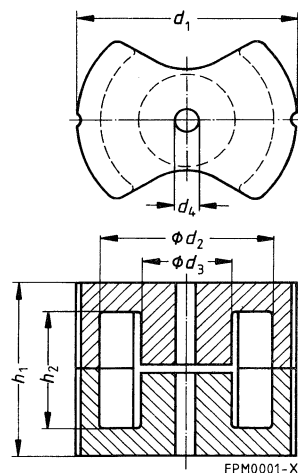
Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾	Core type	Length × width × height ¹⁾
PM 50/39	65 × 52 × 45	PM 87/70	101 × 87 × 72
PM 62/49	76 × 64 × 55	PM 114/93	114 × 92 × 93
PM 74/59	85,5 × 75 × 65		

¹⁾ Height above mounting plane

PM Cores

PM cores for power transformers and energy-storage chokes in high-performance switch-mode power supplies. Also suitable for applications in telecommunications and industrial electronics.



Dimensions (mm)

Core type	d_1	$\varnothing d_2$	$\varnothing d_3$	d_4	h_1	h_2
PM 50/39	50 - 1,7	39,0 + 1,3	20,0 - 6	5,4 + 0,2	39 - 0,4	26,4 + 0,8
PM 62/49	62 - 2,0	48,8 + 1,5	25,5 - 0,8	5,4 + 0,2	49 - 0,4	33,4 + 0,8
PM 74/59	74 - 2,5	57,5 + 1,8	29,5 - 1,0	5,4 + 0,3	59 - 0,6	40,7 + 0,8
PM 87/70	87 - 3,0	67,1 + 2,1	31,7 - 1,0	8,5 + 0,3	70 - 0,8	48,0 + 0,8
PM 114/93	114 - 4,5	88,0 + 3,7	43,0 - 1,4	5,4 + 0,4	93 - 1,0	63,0 + 1,6

Magnetic characteristics and weight (per set)

Core type	Magnetic characteristics					Approx. weight g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
PM 50/39	0,227	84	370	280	31 000	140
PM 62/49	0,190	109	570	470	62 000	280
PM 74/59	0,162	128	790	630	101 000	460
PM 87/70	0,161	146	910	700	133 000	770
PM 114/93	0,116	200	1720	1380	344 000	1940

Core sets PM 50/39 in accordance with DIN 41 989

B 65 646

Rated AL value nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	10 +	20 +	50 +	75 +
250	N27	B65646-A250-A27	5					
7400 (ungapped)	N27	B65646-A-R27	5					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 647

Sections	A _N mm ²	Solder pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	20 +	50 +	75 +
1	154	14	B65647-B1014-T1	5					

Mounting assembly (yoke and base plate)
incl. nuts and washers

B 65 647

for chassis mounting ¹⁾ or PCBs	B65647-A2000	5					
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Core sets PM 62/49 in accordance with DIN 41 989

B 65 684

Rated AL value nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	5 +	10 +	20 +	50 +
315	N27	B65684-A315-A27	1					
9200 (ungapped)	N27	B65684-A-R27	1					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 685

Sections	A _N mm ²	Solder pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	5 +	10 +	20 +	50 +
1	270	16	B65685-B1016-T1	1					

Mounting assembly (yoke and base plate)
incl. nuts and washers

B 65 685

for chassis mounting ¹⁾ or PCBs	B65685-A2000	1					
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¹⁾ On a chassis the coil former has to be mounted with its pins upwards.

PM 74/59
PM 87/70

Core set PM 74/59 in accordance with DIN 41 989

B 65 686

Rated AL value	Material	Ordering code	Min. qty. (sets)	Price per set				
nH				Min. qty. +	5 +	10 +	20 +	50 +
10000 (ungapped)	N27	B65686-A-R27	1					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 687

Sections	A _N	Solder pins	Ordering code	Min. qty.	Price each				
	mm ²				Min. qty. +	5 +	10 +	20 +	50 +
1	442	18	B65687-A1018-T1	1					

Mounting assembly (yoke and base plate)
incl. nuts and washers

B 65 687

for chassis mounting ¹⁾ or PCBs	B65687-A2000	1						
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Core set PM 87/70 in accordance with DIN 41 989

B 65 713

Rated AL value	Material	Ordering code	Min. qty. (sets)	Price per set				
nH				Min. qty. +	5 +	10 +	20 +	50 +
12000 (ungapped)	N27	B65713-A-R27	1					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 714

Sections	A _N	Solder pins	Ordering code	Min. qty.	Price each				
	mm ²				Min. qty. +	5 +	10 +	20 +	50 +
1	657	20	B65714-K1020-T1	1					

Mounting assembly (yoke and base plate)
incl. nuts and washers

B 65 714

for chassis mounting ¹⁾ or PCBs	B65714-A2000	1						
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¹⁾ On a chassis the coil former has to be mounted with its pins upwards.

Core set PM 114/93 in accordance with DIN 41 989

B 65 733

Rated AL value nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	5 +	10 +	25 +	
16000 (ungapped)	N27	B65733-A-R27	1					

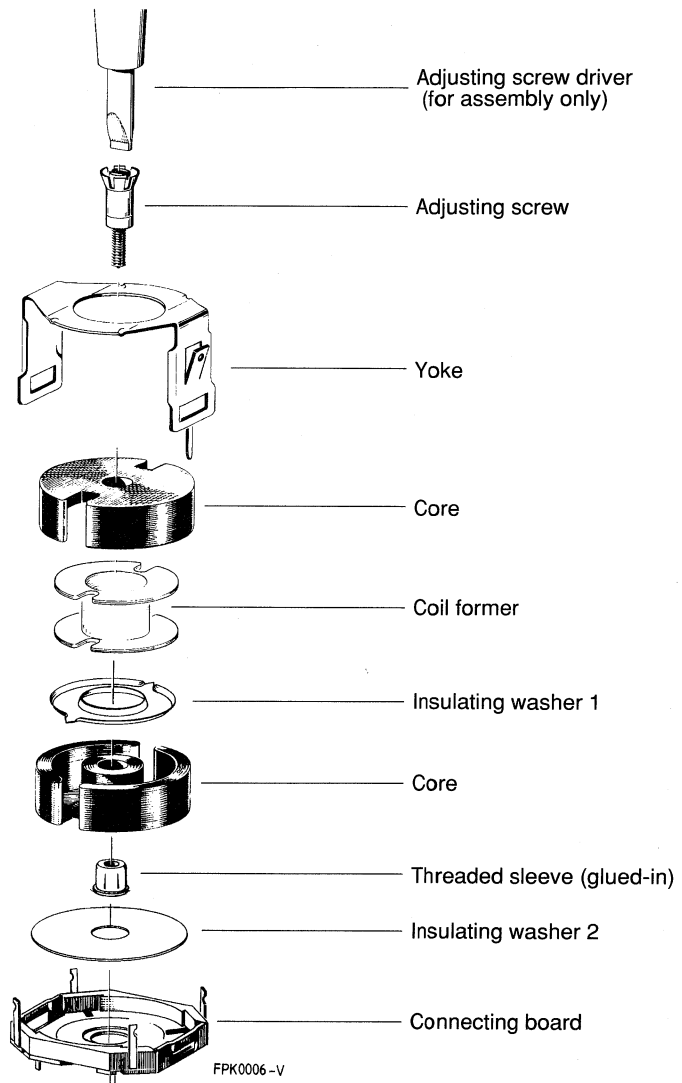
Coil former made of polyphenylene sulphide (UL 94 V-0)

B 65 734

Sections	AN mm ²	Solder pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	5 +	10 +	25 +	
1	1070	—	B65734-B1000-T1	1					

P Cores

Example of an assembly set



P Cores

Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾	Special features
P 4,6 × 4,1	5,5 × 5 × 5,1 6,8 × 5 × 5,1	SMD
P 7 × 4	7,5 × 7,5 × 7,1	
P 9 × 5	9,9 × 9,9 × 8,3 9,9 × 12,3 × 8,3 12,5 × 12,5 × 7,3 12,2 × 16,6 × 6,0	with connecting board (4 solder pins) with connecting board (6 solder pins) coil former with pins ²⁾ SMD
P 11 × 7	12,3 × 12,3 × 9,5 12,3 × 14,6 × 9,5 15,0 × 15,0 × 8,3	with connecting board (4 solder pins) with connecting board (8 solder pins) coil former with pins ²⁾
P 14 × 8	16,8 × 15,0 × 11,3 16,8 × 19,6 × 11,3 17,5 × 17,5 × 9,9	with connecting board (4 solder pins) with connecting board (6 solder pins) coil former with pins ²⁾
P 18 × 11	19,9 × 20,7 × 13,5 22,0 × 22,0 × 11,9	with connecting board coil former with pins ²⁾
P 22 × 13	24,5 × 26,0 × 16,6	
P 26 × 16	27,8 × 28,5 × 19	
P 30 × 19	32,5 × 33,5 × 22,8	
P 36 × 22	40,0 × 41,8 × 27,5	

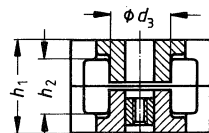
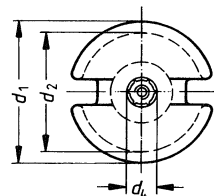
¹⁾ Height above mounting plane

²⁾ Mounting dimensions exclusive of clamps

P Cores

P cores (pot cores) for high-Q resonant circuit inductors and low-distortion small-signal broadband transformers as well as for power applications.

P 9 × 5 to P 30 × 19 are provided with broadened wire-protecting side slots.



Outline drawing for
P 9 × 5 to P 30 × 19
(Other cores with
deviating slot shape)

FPK0001-P

Dimensions (mm)

Core type	d_1	d_2	ϕd_3	d_4	h_1	h_2
P 4,6 × 4,1	4,65 - 0,19	3,7 + 0,15	2,2 - 0,1	1,4 + 0,05	4,1 - 0,1	2,7 + 0,2
P 7 × 4	7,35 - 0,2	5,8 + 0,15	3,0 - 0,1	1,4 + 0,05	4,2 - 0,1	2,8 + 0,2
P 9 × 5	9,3 - 0,3	7,5 + 0,25	3,9 - 0,2	2,0 + 0,1	5,4 - 0,2	3,6 + 0,3
P 11 × 7	11,3 - 0,4	9,0 + 0,4	4,7 - 0,2	2,0 + 0,1	6,6 - 0,2	4,4 + 0,3
P 14 × 8	14,3 - 0,5	11,6 + 0,4	6,0 - 0,2	3,0 + 0,1	8,5 - 0,3	5,6 + 0,4
P 18 × 11	18,4 - 0,8	14,9 + 0,5	7,6 - 0,3	3,0 + 0,1	10,6 - 0,2	7,3 + 0,6
P 22 × 13	22,0 - 0,8	17,9 + 0,6	9,4 - 0,3	4,4 + 0,2	13,6 - 0,4	9,2 + 0,4
P 26 × 16	26,0 - 1,0	21,2 + 0,8	11,5 - 0,4	5,4 + 0,2	16,3 - 0,4	11,0 + 0,4
P 30 × 19	30,5 - 1,0	25,0 + 0,8	13,5 - 0,4	5,4 + 0,2	19,0 - 0,4	13,0 + 0,4
P 36 × 22	36,0 - 1,0	29,9 + 0,8	16,2 - 0,4	5,4 + 0,3	22,0 - 0,6	14,6 + 0,4

Magnetic characteristics and weight (per set)

Core type	Magnetic characteristics with center hole / without center hole					Approx. weight with/without center hole g
	$\Sigma l / A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
P 4,6 × 4,1	2,60/ —	7,6/ —	2,8/ —	—	21,3/ —	0,17/ —
P 7 × 4	1,43/ —	10,0/ —	7,0/ —	—	70/ —	0,5 / —
P 9 × 5	1,25/1,13	12,2/12,5	9,8/ 11,1	—/ 9,3	120/ 140	0,8 / 1,0
P 11 × 7	1,0 /0,92	15,9/16,3	15,9/ 17,7	—/ 16,6	252/ 288	1,7 / 1,8
P 14 × 8	0,8 /0,73	20,0/21,0	25 / 28,7	—/ 27,0	500/ 603	3,2 / 3,5
P 18 × 11	0,6 /0,57	25,9/26,6	43 / 46,7	—/ 43,6	1120/ 1240	6,0 / 6,4
P 22 × 13	0,5 /0,46	31,6/33,2	63 / 72,6	—/ 67,2	2000/ 2410	13 /14
P 26 × 16	0,4 /0,37	37,2/40,0	93 /108	—/100	3460/ 4320	21 /23
P 30 × 19	0,33/0,30	45,0/48,6	136 /162	—/139	6100/ 7870	36 /38
P 36 × 22	0,26/0,23	52,0/56,7	202 /247	—/200	10600/14000	57 /59,5

Miniature pot core sets for adjustable miniature inductors

B 65 495

Item	Rated AL value nH	Material	Ordering code -B (with center hole) -K (with thread)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	16	K 1	B65495-K16-A1	25					
2	40	M 33	B65495-K40-A33	25					
3	800 ¹⁾	N 30	B65495-B-Y30	25					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 496

Sections	A _N mm ²	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
1	0,8	B65496-B1000-T1	25					

Connecting boards with 4 solder pins

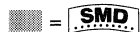
B 65 496

for PCBs	B65496-A2002	25					
for SMD technology	B65496-A2003	25					

Adjusting screws for core sets (with color code)

B 65 496

for item 1	brown	B65496-A3001-X17	25				
for item 2	blue	B65496-A3001-X1	25				



¹⁾ Ungapped

Core sets

B 65 511

Item	Rated AL value	Material	Ordering code	Min. qty. (sets)	Price per set				
	nH				Min. qty. +	50 +	100 +	250 +	500 +
1	8	U17 ¹⁾	B65511-A8-A17	20					
2	25	K1	B65511-A25-A1	20					
3	63	M33	B65511-A63-A33	20					
4	100	N48	B65511-A100-A48	20					
5	2000 ²⁾	N30	B65511-A-Y30	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 65 512

Sections	AN	Ordering code	Min. qty.	Price each				
	mm ²			Min. qty. +	50 +	100 +	250 +	500 +
1	2,2	B65512-C-T1	20					

Mounting assembly (connecting board and yoke) for PC boards

Connecting board with thread

B 65 512

with 5 solder pins	B65512-C2001	20					
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Adjusting screws for core sets (with color code)

B 65 512

for item 1, 2, 3	white	B65512-A3001-X17	20					
for item 3, 4	yellow	B65512-A3001-X1	20					

¹⁾ Dimensions may be exceeded by up to 10%

²⁾ Ungapped

Core sets in accordance with IEC 133 and DIN 41 293

B 65 517

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with thr. flange) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +

With and without center hole

1	16	K12	B65517-D16-A12	20					
2	25	K1	B65517-D25-A1	20					
3	40	K1	B65517-D40-A1	20					
4	63	M33	B65517-D63-A33	20					
5	100	N48	B65517-D100-A48	20					
6	160	N48	B65517-D160-A48	20					
7	250	N26	B65517-D250-K26	20					
8	95 ¹⁾	K1	B65517-D-R1	20					
9	1200 ¹⁾	N26	B65517-D-R26	20					
10	2500 ¹⁾	N30	B65517-D-R30	20					
▼ 11	1000 ¹⁾	N47	B65517-W-R47	20					
▼ 12	1300 ¹⁾	N67	B65517-W-R67	20					
▼ 13	5500 ¹⁾	T38	B65517-W-Y38	20					

With threaded flange²⁾

14	16	K12	B65517-T16-A12	20					
15	25	K1	B65517-T25-A1	20					
16	40	K1	B65517-T40-A1	20					
17	63	M33	B65517-T63-A33	20					
18	100	N48	B65517-T100-A48	20					
19	160	N48	B65517-T160-A48	20					

Coil formers

B 65 518, B 65 522, B 65 524

Sections	A _N mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR polyterephthalate (UL 94 V-0)

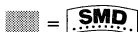
1	3,6	—	B65522-B-T1	20					
2	3,2	—	B65522-B-T2	20					

Made of GFR thermosetting plastic (UL 94 V-0), with pins

▼ 1	3,4	8	B65518-J1008-D1	20					
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Made of liquid crystal polymer (UL 94 V-0) for SMD technology

▽ 1	3,4	4	B65524-C1004-T1	20					
▽ 1	3,4	8	B65524-C1008-T1	20					

¹⁾ Ungapped²⁾ Not suitable for assembly sets with connecting board

Insulating washer made of polycarbonate (UL 94 V-0)

B 65 522

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
between core/coil former	B65522-A5000	20					

Mounting assemblies (connecting board and yoke) for PC boards

B 65 518

Connecting board with thread

with 4 solder pins	B65518-D2001	20					
with 6 solder pins	B65518-D2002	20					

Clamp with ground terminal

for assembly set with pin coil former

B 65 518

▼ (required: 2 pcs/set))	B65518-A2010	40					
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Adjusting screws for core sets (with color code)

B 65 518

for item 1, 2, 14, 15	brown	B65518-C3000-X101	20				
for item 3, 4, 5, 16, 17, 18	blue	B65518-C3000-X1	20				
for item 6, 19	green	B65518-C3000-X22	20				

Core sets in accordance with IEC 133 and DIN 41 293

B 65 531

Item	Rated Al. value nH	Material	Ordering code -D (with center hole) -T (with thr. flange) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +

With and without center hole

1	25	K1	B65531-D25-A1	20					
2	40	K1	B65531-D40-A1	20					
3	63	M33	B65531-D63-A33	20					
4	160	N48	B65531-D160-A48	20					
5	250	N48	B65531-D250-A48	20					
6	1800 ¹⁾	N26	B65531-D-R26	20					
7	3500 ¹⁾	N30	B65531-W-R30	20					

With threaded flange²⁾

8	25	K1	B65531-T25-A1	20					
9	40	K1	B65531-T40-A1	20					
10	63	M33	B65531-T63-A33	20					
11	160	N48	B65531-T160-A48	20					
12	250	N48	B65531-T250-A48	20					

Coil formers

B 65 532

Sections	A _N mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR polyterephthalate (UL 94 V-0)

1	4,2	—	B65532-B-T1	20					
2	3,8	—	B65532-B-T2	20					

Made of GFR thermosetting plastic (UL 94 V-0), with pins

▼ 1	4,2	8	B65532-J1008-D1	20					
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Insulating washer made of polycarbonate (UL 94 V-0)

B 65 532

between core/coil former	B65532-A5000	20							
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¹⁾ Ungapped

²⁾ Not suitable for assembly sets with connecting board

Mounting assemblies (connecting board and yoke) for PC boards

Connecting board with thread

B 65 535

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
with 4 solder pins	B65535-B2	20					
with 8 solder pins	B65535-B3	20					

Clamp with ground terminal

for assembly set with pin coil former

B 65 532

▼ (required: 2 pcs/set)	B65532-A2010	40					
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Adjusting screws for core sets (with color code)

B 65 539

for item 1, 2, 8, 9	yellow	B65539-C1003-X1	20				
for item 3, 10	black	B65539-C1003-X101	20				
for item 4, 5, 11, 12	red	B65539-C1002-X22	20				

Core sets in accordance with IEC 133

B 65 541

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	40	K1	B65541-T40-A1	20					
2	100	M33	B65541-T100-A33	20					
3	160	N48	B65541-T160-G48	20					
4	250	N48	B65541-T250-A48	20					
5	315	N48	B65541-T315-A48	20					
6	400	N48	B65541-T400-A48	20					
7	140 ¹⁾	K1	B65541-D-R1	20					
8	2300 ¹⁾	N26	B65541-D-R26	20					
9	2800 ¹⁾	N67	B65541-W-R67	20					
10	4600 ¹⁾	N30	B65541-W-R30	20					
11	9800 ¹⁾	T38	B65541-W-Y38	20					

Coil formers

B 65 542

Sections	An mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR polyterephthalate (UL 94 V-0)

1	8,4	—	B65542-B-T1	20					
2	7,6	—	B65542-B-T2	20					

Made of GFR thermosetting plastic (UL 94 V-0), with pins

▼ 1	8,4	8	B65542-J1008-D1	20					
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Insulating washers made of polycarbonate (UL 94 V-0)

B 65 542

between core/coil former	B65542-A5000	20						
between core/connecting board	B65542-A5002	20						

Mounting assemblies (connecting board and yoke) for PC boards

B 65 545

with 4 solder pins	B65545-B9	20						
with 6 solder pins	B65545-B10	20						

¹⁾ Ungapped

P 14 × 8

Clamp with ground terminal
for assembly set with pin coil former

B 65 542

	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +
▼ (required: 2 pcs/set)	B65542-A2010	40					

Adjusting screws for core sets (with color code)

B 65 549

for item 1	green	B65549-E3-X101	20				
for item 2	white	B65549-E3-X23	20				
for item 3, 4, 5, 6	black	B65549-E4-X23	20				

Core sets in accordance with IEC 133**B 65 651**

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	40	K1	B65651-T40-A1	10					
2	100	M33	B65651-T100-A33	10					
3	160	N48	B65651-T160-G48	10					
4	250	N48	B65651-T250-A48	10					
5	315	N48	B65651-T315-A48	10					
6	400	N48	B65651-T400-A48	10					
7	500	N48	B65651-T500-A48	10					
8	630	N26	B65651-D630-K26	10					
9	2900 ¹⁾	N26	B65651-D-R26	10					
10	3600 ¹⁾	N67	B65651-W-R67	10					
11	5900 ¹⁾	N30	B65651-W-R30	10					
12	12600 ¹⁾	T38	B65651-W-Y38	10					

Coil formers**B 65 652**

Sections	AN mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR polyterephthalate (UL 94 V-0)

1	16	—	B65652-B-T1	10					
2	13	—	B65652-B-T2	10					
3	12	—	B65652-B-T3	10					

Made of GFR thermosetting plastic (UL 94 V-0), with pins

▼ 1	16	8	B65652-J1008-D1	10					
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Insulating washers made of polycarbonate (UL 94 V-0)**B 65 652**

between core/coil former	B65652-A5000	10					
between core/connecting board	B65652-A5002	10					

Mounting assemblies (connecting board and yoke) for PC boards**B 65 655**

with 4 solder pins	B65655-B9	10					
with 8 solder pins	B65655-B10	10					

Clamp with ground terminal
for assembly set with pin coil former**B 65 652**

▼ (required: 2 pcs/set)	B65652-A2010	20					
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¹⁾ Ungapped

Adjusting screws for core sets (with color code)

B 65 659

		Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
for item 1, 2, 3	white	B65659-F1-X101	20					
for item 2, 3	brown	B65659-F4-X101	20					
for item 4	green	B65659-F1-X1	20					
for item 5, 6	black	B65659-F3-X23	20					
for item 6, 7	yellow	B65659-F4-X23	20					

Core sets in accordance with IEC 133 and DIN 41 293

B 65 661

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	160	N48	B65661-T160-G48	10					
2	250	N48	B65661-T250-G48	10					
3	400	N48	B65661-T400-A48	10					
4	630	N48	B65661-T630-A48	10					
5	1250	N26	B65661-D1250-K26	10					
6	3800 ¹⁾	N26	B65661-D-R26	10					
7	4400 ¹⁾	N67	B65661-W-R67	10					
8	7600 ¹⁾	N30	B65661-W-R30	10					
9	17400 ¹⁾	T38	B65661-W-Y38	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 65 662

Sections	A _N mm ²	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
1	23,4	B65662-B-T1	10					
2	22,0	B65662-B-T2	10					
3	20,0	B65662-B-T3	10					

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 662

between core/coil former	B65662-A5000	10					
between core/connecting board	B65662-A5002	10					

Mounting assembly (connecting board and yoke) for PC boards

B 65 665

with 8 solder pins	B65665-C4	10					
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Adjusting screws for core sets (with color code)

B 65 669

for item 1	black	B65669-D8-X25	10				
for item 2	yellow	B65669-D11-X22	10				
for item 3	red	B65669-D7-X22	10				
for item 4	white	B65669-E6-X22	10				

¹⁾ Ungapped

Core sets in accordance with IEC 133 and DIN 41 293

B 65 671

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	250	N48	B65671-T250-G48	10					
2	400	N48	B65671-T400-A48	10					
3	630	N48	B65671-T630-A48	10					
4	1000	N26	B65671-D1000-J26	10					
5	1600	N26	B65671-D1600-K26	10					
6	4900 ¹⁾	N26	B65671-D-R26	10					
7	5500 ¹⁾	N67	B65671-W-R67	10					
8	9700 ¹⁾	N30	B65671-W-R30	10					
9	22000 ¹⁾	T38	B65671-W-Y38	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 65 672

Sections	AN mm ²	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
1	32	B65672-B-T1	10					
2	30	B65672-B-T2	10					

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 672

between core/coil former	B65672-B5000	10						
between core/connecting board	B65672-A5002	10						

Mounting assembly (connecting board and yoke) for PC boards

B 65 675

with 8 solder pins	B65675-B5	10						
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Adjusting screws for core sets (with color code)

B 65 679

for item 1	red	B65679-E3-X22	10					
for item 2	black	B65679-E2-X22	10					
for item 3	white	B65679-E1-X22	10					

¹⁾ Ungapped

Core sets in accordance with IEC 133 and DIN 41 293

B 65 701

Item	Rated AL value nH	Material	Ordering code -D (with center hole) -T (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
					Min. qty. +	50 +	100 +	250 +	500 +
1	250	N48	B65701-T250-G48	10					
2	400	N48	B65701-T400-A48	10					
3	630	N48	B65701-T630-A48	10					
4	1000	N48	B65701-T1000-A48	10					
5	2000	N26	B65701-D2000-K26	10					
6	6200 ¹⁾	N26	B65701-D-R26	10					
7	7000 ¹⁾	N67	B65701-W-R67	10					
8	11500 ¹⁾	N30	B65701-W-R30	10					
9	28000 ¹⁾	T38	B65701-W-Y38	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 65 702

Sections	AN mm ²	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
1	48	B65702-B-T1	10					
2	45	B65702-B-T2	10					

Insulating washers made of polycarbonate (UL 94 V-0)

B 65 702

between core/coil former	B65702-A5000	10					
between core/connecting board	B65702-A5002	10					

Mounting assembly (connecting board and yoke) for PC boards

B 65 705

with 8 solder pins	B65705-B3	10					
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Adjusting screws for core sets (with color code)

B 65 679

for item 1	red	B65679-E3-X22	10				
for item 2, 3	black	B65679-E2-X22	10				
for item 3, 4	white	B65679-E1-X22	10				

¹⁾ Ungapped

Core sets in accordance with IEC 133 and DIN 41 293

B 65 611

Item	Rated AL value	Material	Ordering code -L (with center hole) -N (with threaded sleeve) -W (without center hole)	Min. qty. (sets)	Price per set				
	nH				Min. qty. +	20 +	50 +	100 +	250 +
1	250	N48	B65611-N250-G48	10					
2	7600 ¹⁾	N26	B65611-L-R26	10					
3	8800 ¹⁾	N67	B65611-W-R67	10					
4	15200 ¹⁾	N30	B65611-W-R30	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 65 612

Sections	AN	Ordering code	Min. qty.	Price each				
	mm ²			Min. qty. +	20 +	50 +	100 +	250 +
1	63	B65612-B-T1	10					
2	59	B65612-B-T2	10					

Insulating washer made of polycarbonate (UL 94 V-0)

B 65 612

between core/coil former	B65612-A5000	10					
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Mounting assembly (connecting board and yoke) for PC boards

B 65 615

with 10 solder pins	B65615-B1	10					
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Adjusting screw for core sets (with color code)

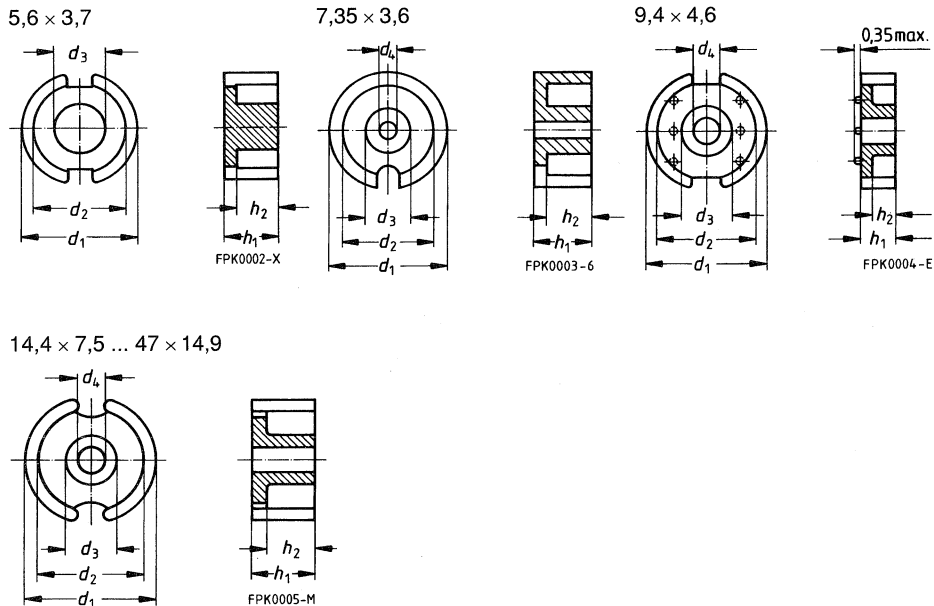
B 65 679

for item 1	yellow	B65679-E2-X101	10					
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¹⁾ Ungapped

P Core Halves (Pot Cores for Proximity Switches)

Inductive proximity switches are used as contactless motion detectors and output indicators. The dimensions of most of our P core halves are matched to the standardized switches (DIN EN 50 008).



Dimensions (mm)

Core type	d_1	d_2	d_3	d_4	h_1	h_2
5,6 × 3,7	5,6 - 0,25	4,4 + 0,2	2,5 - 0,15	—	3,7 - 0,25	2,7 + 0,25
7,35 × 3,6	7,35 - 0,2	5,8 + 0,1	3,1 - 0,1	1,05 + 0,1	3,6 - 0,1	2,8 + 0,2
9,4 × 4,6	9,4 - 0,4	7,5 + 0,25	3,9 - 0,2	2,0 + 0,1	4,6 - 0,25	3,55 + 0,25
14,4 × 7,5	14,4 - 0,6	11,6 + 0,5	6,0 - 0,3	2,95 + 0,25	7,5 - 0,2	5,6 + 0,3
25 × 8,9	25,0 - 1,0	20,5 + 1,0	11,3 - 0,6	5,2 + 0,4	8,9 - 0,45	5,9 + 0,4
30,5 × 10,2	30,5 - 1,0	25,0 + 0,8	13,5 - 0,4	5,4 + 0,2	10,2 - 0,5	7,0 + 0,4
35 × 10,8	35,0 - 1,0	29,2 + 1,2	15,7 - 0,6	5,3 + 0,3	10,8 - 0,5	7,2 + 0,4
47 × 14,9	47,0 - 1,3	39,0 + 1,1	20,0 - 0,6	5,5 + 0,2	14,9 - 0,7	10,0 + 0,5

P Core Halves

Cores

Material	Standard size as per DIN EN 50 008	Ordering code	Min. qty.	Price each				
				Min. qty. +	100 +	250 +	500 +	1000 +

Core half 5,6 × 3,7 (without coil former)

B 65 931

N22	M 8 × 1	B65931-C-X22	50					
M33		B65931-C-X33	50					

Core half 7,35 × 3,6 (without coil former)

B 65 933

N22	—	B65933-A-X22	50					
M33		B65933-A-X33	50					

Core half 9,4 × 4,6 (without coil former)

B 65 935

N22	M 12 × 1	B65935-A-X22	50					
M33		B65935-A-X33	50					

Core half 14,4 × 7,5 (without coil former)

B 65 937

N22	M 18 × 1	B65937-A-X22	50					
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Core half 25 × 8,9 (with coil former)

B 65 939

			Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
N22	M 30 × 1,5	B65939-A-X22	20					

Core half 30,5 × 10,2 (with coil former)

B 65 941

N22	M 40 × 1,5	B65941-A-X22	20					
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Core half 35 × 10,8 (without coil former)

B 65 947

			Min. qty.	Min. qty. +	20 +	50 +	100 +	250 +
N22	—	B65947-A-X22	10					

Core half 47 × 14,9 (with coil former)

B 65 943

			Min. qty.	Min. qty. +	10 +	20 +	50 +	100 +
N22	—	B65943-A-X22	5					

P Core Halves

Coil formers made of GFR polyterephthalate (UL 94 V-0)

A _N mm ²	Ordering code	Min. qty.	Price each				
			Min. qty. +	50 +	100 +	250 +	500 +

for core half 25 × 8,9

B 65 940

16,7	B65940-B-T1	20					
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for core half 30,5 × 10,2

B 65 942

24,4	B65942-B-T1	20					
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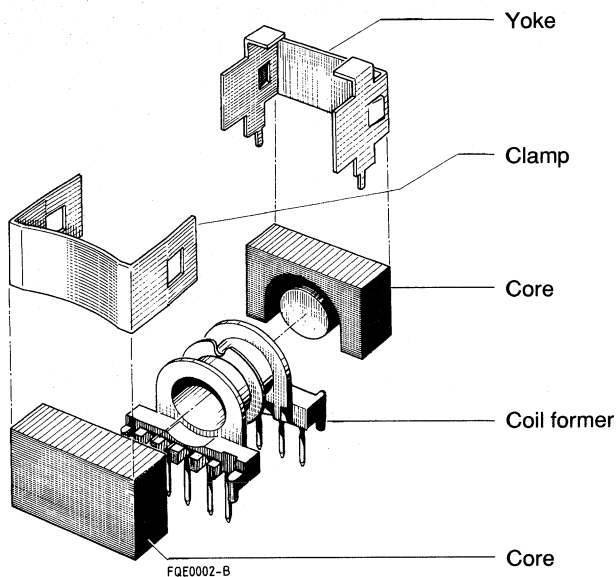
for core half 47 × 14,9

B 65 944

		Min. qty.	Min. qty. +	10 +	20 +	50 +	100 +
62	B65944-B-T1	5					

EP Cores

Example of an assembly set



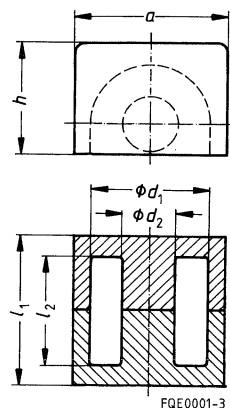
Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾	Special features
EP 7	7,5 × 10 × 10 9,2 × 12,8 × 8,5	SMD
EP 10	12 × 14,2 × 12,5	
EP 13	15 × 16 × 13,7 12,9 × 19,4 × 12,4	SMD
EP 17	20 × 21,6 × 16,2	
EP 20	23 × 27,5 × 20,5	

¹⁾ Height above mounting plane

EP Cores

EP cores for transformers featuring high inductance and high economy of space. Also suitable for power applications.



Dimensions (mm)

Core type	a	$\varnothing d_1$	$\varnothing d_2$	h	l_1	l_2
EP 7	9,4 – 0,4	7,2 + 0,4	3,4 – 0,2	6,50 – 0,3	7,5 – 0,2	5,0 + 0,4
EP 10	11,8 – 0,6	9,2 + 0,4	3,45 – 0,3	7,85 – 0,4	10,4 – 0,2	7,2 + 0,4
EP 13	12,8 – 0,6	9,7 + 0,6	4,5 – 0,3	9,00 – 0,4	13,0 – 0,3	9,0 + 0,4
EP 17	18,5 – 1,0	11,5 + 1,0	5,85 – 0,35	11,25 – 0,5	17,0 – 0,4	11,2 + 0,6
EP 20	24,5 – 1,0	16,1 + 0,8	9,00 – 0,5	15,30 – 0,7	21,6 – 0,4	14,0 + 0,6

Magnetic characteristics and weight (per set)

Core type	Magnetic characteristics					Approx. weight g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
EP 7	1,52	15,7	10,3	8,5	162	1,4
EP 10	1,70	19,2	11,3	8,5	217	2,8
EP 13	1,24	24,2	19,5	14,9	472	5,1
EP 17	0,84	28,5	33,9	25,5	966	11,0
EP 20	0,51	40,0	78,0	60,0	3120	28,0

Core sets**B 65 839**

Rated AL value (ungapped) nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	50 +	100 +	250 +	500 +
1100	N67	B65839-A-R67	20					
2000	N30	B65839-A-R30	20					
5200	T38	B65839-A-Y38	20					

Coil formers**B 65 840**

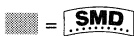
Sections	AN mm ²	Pins/ terminals	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +

Made of GFR thermosetting plastic (UL 94 V-0)

1	3,7	6	B65840-A1000-D1	20					
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Made of liquid crystal polymer (UL 94 V-0) for SMD technology

▽ 1	4,0	6	B65840-N1106-T1	20					
▼ 2	3,6	6	B65840-N1106-T2	20					



Core sets**B 65 841**

Rated AL value (ungapped) nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	50 +	100 +	250 +	500 +
1100	N67	B65841-A-R67	20					
2000	N30	B65841-A-R30	20					
4800	T38	B65841-A-Y38	20					

Coil formers made of GFR thermosetting plastic (UL 94 V-0)**B 65 842**

Sections	AN mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
1	11,4	8	B65842-B1008-D1	20					
2	10,0	8	B65842-B1008-D2	20					

Mounting assembly (yoke and clamp)**B 65 842**

with ground terminal	B65842-A2000	20					
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Core sets**B 65 843**

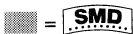
Rated AL value (ungapped) nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	50 +	100 +	250 +	500 +
1600	N67	B65843-A-R67	20					
2800	N30	B65843-A-R30	20					
7000	T38	B65843-A-Y38	20					
7000	T38	B65843-A7000-U638	20					

Coil formers**B 65 844**

Sections	A _N	Pins/ terminals	Ordering code	Min. qty.	Price each				
	mm ²				Min. qty. +	50 +	100 +	250 +	500 +
Made of GFR thermosetting plastic (UL 94 V-0)									
1	13,8	10	B65844-B1010-D1	20					
2	13,0	10	B65844-B1010-D2	20					
Made of liquid crystal polymer (UL 94 V-0) for SMD technology									
1	14,0	10	B65844-N1110-T1	20					
2	13,2	10	B65844-N1110-T2	20					

Mounting assembly (yoke and clamp)**B 65 844**

with ground terminal	B65844-A2000	20					
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Core sets EP 17

B 65 845

Rated AL value (ungapped) nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	50 +	100 +	250 +	500 +
2400	N67	B65845-J-R67	10					
4300	N30	B65845-J-R30	10					
11400	T38	B65845-J-Y38	10					

Coil formers made of GFR thermosetting plastic (UL 94 V-0)

B 65 846

Sections	AN mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
1	18,8	8	B65846-K1008-D1	10					
2	17,7	8	B65846-K1008-D2	10					

Mounting assembly (yoke and clamp)

B 65 846

with ground terminal	B65846-J2000	10						
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Core sets EP 20

B 65 847

Rated AL value (ungapped) nH	Material	Ordering code	Min. qty. (sets)	Price per set				
				Min. qty. +	50 +	100 +	250 +	500 +
4000	N67	B65847-A-R67	10					
6700	N30	B65847-A-R30	10					
18700	T38	B65847-A-Y38	10					

Coil formers made of GFR thermosetting plastic (UL 94 V-0)

B 65 848

Sections	AN mm ²	Pins	Ordering code	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
1	33,8	10	B65848-C1010-D1	10					
2	31,8	10	B65848-C1010-D2	10					

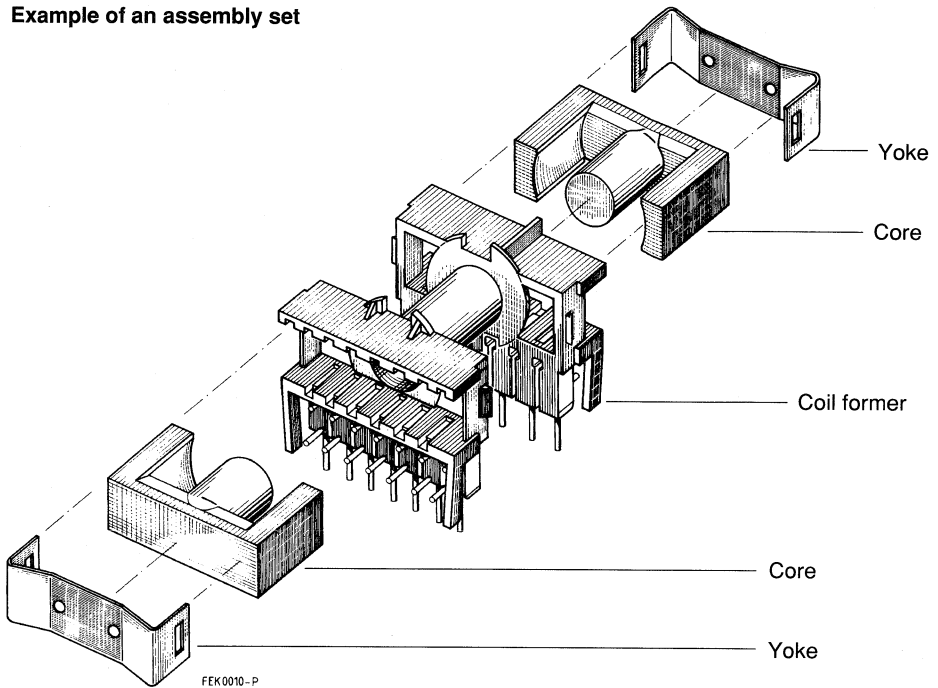
Mounting assembly (yoke and clamp)

B 65 848

with ground terminal	B65848-A2000	10						
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ETD Cores

Example of an assembly set



Mounting dimensions of the assembly set (mm)

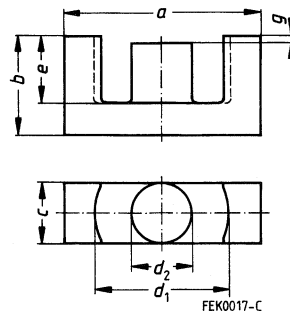
Core type	Length × width × height ¹⁾	Special features
ETD 29	35,5 × 35,5 × 25,5 24 × 35,5 × 41,2	Coil former with horizontal magnetic axis Coil former with vertical magnetic axis
ETD 34	43 × 40 × 35 27,5 × 40 × 46	Coil former with horizontal magnetic axis Coil former with vertical magnetic axis
ETD 39	48 × 45 × 38	
ETD 44	53 × 50 × 41	
ETD 49	58 × 55 × 43,5	

¹⁾ Height above mounting plane

ETD Cores

ETD cores in accordance with IEC 51 (CO) 276, cores with CECC quality approval available.

ETD cores are particularly suitable for switch-mode power supplies with excellent volume/weight/performance ratio. They feature an almost constant magnetic cross section along the magnetic path and are provided with optimized accessories.



Dimensions (mm)

Core type	a	b	c	d_1	d_2	e
ETD 29	30,6 – 1,6	16,0 – 0,4	9,8 – 0,6	22,0 + 1,4	9,8 – 0,6	10,7 + 0,6
ETD 34	34,0 + 1,0/– 0,6	17,5 – 0,4	11,1 – 0,6	25,6 + 1,4	11,1 – 0,6	11,8 + 0,6
ETD 39	38,9 + 1,1/– 0,7	20,0 – 0,4	12,8 – 0,6	29,3 + 1,6	12,8 – 0,6	14,2 + 0,8
ETD 44	43,8 + 1,2/– 0,8	22,5 – 0,4	15,2 – 0,8	32,5 + 1,6	15,2 – 0,8	16,1 + 0,8
ETD 49	48,5 + 1,3/– 0,9	24,9 – 0,4	16,7 – 0,8	36,1 + 1,8	16,7 – 0,8	17,7 + 0,8

Magnetic characteristics and weight

Core type	Magnetic characteristics (per set)					Approx. weight/pc. g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
ETD 29	0,92	71	76	70	5377	14
ETD 34	0,81	78,6	97,1	91,6	7640	20
ETD 39	0,74	92,2	125	123	11500	30
ETD 44	0,60	103	173	172	17800	47
ETD 49	0,54	114	211	209	24000	62

Cores**B 66 358**

Dimension "g" mm	Typ. AL value nH	Material	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	2000	N27	B66358-G-X127	20					
0,2 ± 0,02	380	N27	B66358-G200-X127	20					
0,5 ± 0,05	200	N27	B66358-G500-X127	20					
1,0 ± 0,05	125	N27	B66358-G1000-X127	20					
0	2200	N67	B66358-G-X167	20					
0,2 ± 0,02	380	N67	B66358-G200-X167	20					
0,5 ± 0,05	200	N67	B66358-G500-X167	20					
1,0 ± 0,05	125	N67	B66358-G1000-X167	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0)**B 66 359**

Version	Sec- tions	A _N mm ²	Pins						
horizontal	1	97	13	B66359-A1013-T1	20				
▼ vertical	1	97	14	B66359-J1014-T1	20				

Yoke**B 66 359**

(required: 2 pcs/set)	B66359-A2000	40					
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

Cores in accordance with IEC 51 (CO) 276

N 27 cores with CECC quality approval

B 66 361

Dimension "g"	Typ. AL value	Material	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
mm	nH								
0	2400	N27	B66361-G-X127	20					
0,2 ± 0,02	480	N27	B66361-G200-X127	20					
0,5 ± 0,05	250	N27	B66361-G500-X127	20					
1,0 ± 0,05	155	N27	B66361-G1000-X127	20					
0	2600	N67	B66361-G-X167	20					
0,2 ± 0,05	480	N67	B66361-G200-X167	20					
0,5 ± 0,05	250	N67	B66361-G500-X167	20					
1,0 ± 0,05	155	N67	B66361-G1000-X167	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0)**B 66 362**

Version	Sec- tions	AN mm ²	Pins						
horizontal	1	122	14	B66362-A1014-T1	20				
vertical	1	122	14	B66362-L1014-T1	20				

Yoke**B 66 362**

(required: 2 pcs/set)	B66362-A2000	40					
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

Cores in accordance with IEC 51 (CO) 276
 N 27 cores with CECC quality approval
B 66 363

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	2700	N27	B66363-G-X127	20					
0,5 ± 0,05	325	N27	B66363-G500-X127	20					
1,0 ± 0,05	195	N27	B66363-G1000-X127	20					
0	2800	N67	B66363-G-X167	20					
0,5 ± 0,05	325	N67	B66363-G500-X167	20					
1,0 ± 0,05	195	N67	B66363-G1000-X167	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)
B 66 364

Sections	An mm ²	Pins							
1	178	16	B66364-A1016-T1	20					

Yoke**B 66 364**

(required: 2 pcs/set)	B66364-A2000	40						
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
 With both cores the typical AL value specified will be obtained.

ETD 44 cores in accordance with IEC 51 (CO) 276
N 27 cores with CECC quality approval

B 66 365

Dimension "g" mm	Typ. AL value nH	Material	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3300	N27	B66365-G-X127	20					
0,5 ± 0,05	440	N27	B66365-G500-X127	20					
1,0 ± 0,05	260	N27	B66365-G1000-X127	20					
0	3500	N67	B66365-G-X167	20					
0,5 ± 0,05	440	N67	B66365-G500-X167	20					
1,0 ± 0,05	260	N67	B66365-G1000-X167	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 66 366

Sections	A _N mm ²	Pins							
1	210	18	B66366-A1018-T1	20					

Yoke

B 66 366

(required: 2 pcs/set)	B66366-A2000	40							
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ETD 49 cores in accordance with IEC 51 (CO) 276
N 27 cores with CECC quality approval

B 66 367

Dimension "g" mm	Typ. AL value nH	Material	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3700	N27	B66367-G-X127	20					
0,5 ± 0,05	525	N27	B66367-G500-X127	20					
1,0 ± 0,05	315	N27	B66367-G1000-X127	20					
0	3800	N67	B66367-G-X167	20					
0,5 ± 0,05	525	N67	B66367-G500-X167	20					
1,0 ± 0,05	315	N67	B66367-G1000-X167	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 66 368

Sections	A _N mm ²	Pins							
1	269,4	20	B66368-A1020-T1	20					

Yoke

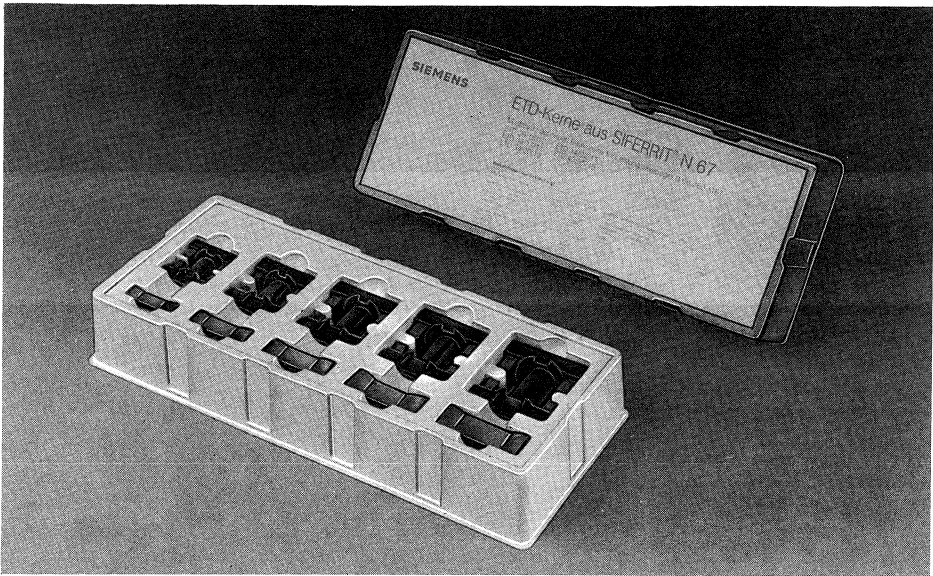
B 66 368

(required: 2 pcs/set)	B66368-A2000	40							
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

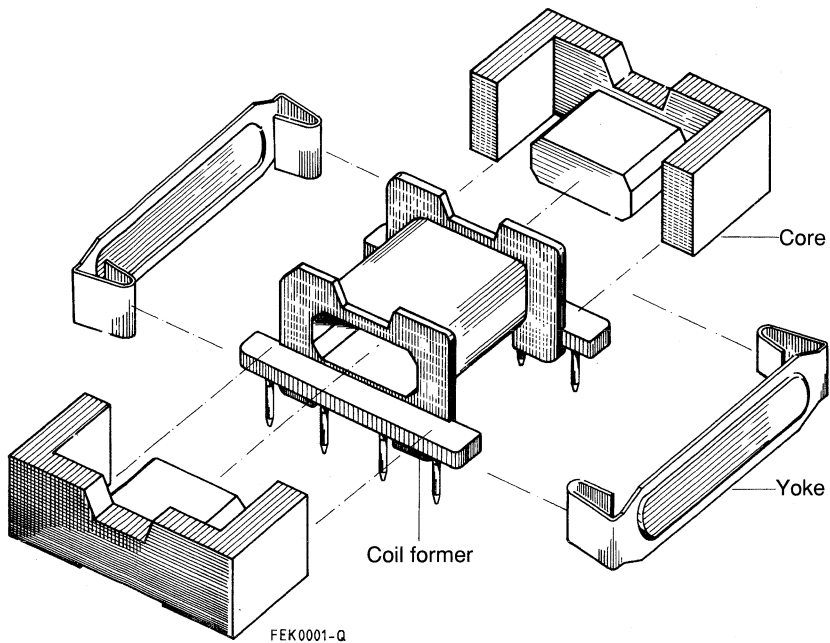
**ETD Cores
Sample Set**

The sample set contains an ungapped core set of each size with matching accessories.



Type	Material	Ordering code	Min. qty.	Price each		
				Min. qty. +	5 +	10 +
ETD core sample set	N67	B66360-X167	1			

Example of an assembly set



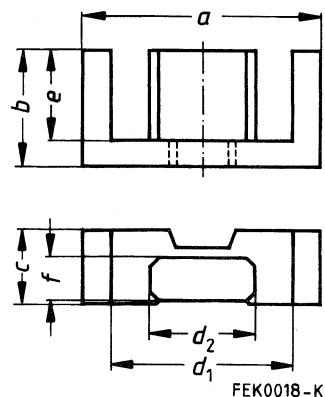
Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾
EFD 15	19,3 × 17,0 × 8
EFD 20	24,3 × 22,0 × 10
EFD 25	29,3 × 27,3 × 12,5
EFD 30	34,4 × 32,5 × 12,5

¹⁾ Height above mounting plane

EFD Cores

E core with flattened and recessed center leg for particularly flat transformer design.



Dimensions (mm)

Core type	a	b	c	d_1	d_2	e	f
EFD 15	$15 \pm 0,4$	$7,5 \pm 0,15$	$4,65 \pm 0,15$	$11,0 \pm 0,35$	$5,3 \pm 0,15$	$5,5 \pm 0,25$	$2,4 \pm 0,10$
EFD 20	$20 \pm 0,55$	$10,0 \pm 0,15$	$6,65 \pm 0,15$	$15,4 \pm 0,5$	$8,9 \pm 0,2$	$7,7 \pm 0,25$	$3,6 \pm 0,15$
EFD 25	$25 \pm 0,65$	$12,5 \pm 0,15$	$9,1 \pm 0,2$	$18,7 \pm 0,6$	$11,4 \pm 0,2$	$9,3 \pm 0,25$	$5,2 \pm 0,15$
EFD 30	$30 \pm 0,8$	$15,0 \pm 0,15$	$9,1 \pm 0,2$	$22,4 \pm 0,75$	$14,6 \pm 0,25$	$11,2 \pm 0,3$	$4,9 \pm 0,15$

Magnetic characteristics and weight

Core type	Magnetic characteristics (per set)					Approx. weight/pc. g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
EFD 15	2,27	34	15	12,2	510	1,5
EFD 20	1,52	47	31	31	1460	3,6
EFD 25	1,00	57	58	57	3300	8,5
EFD 30	0,98	68	69	69	4700	12

EFD 15
EFD 20

EFD 15 cores

B 66 413

Dimension "g" mm	Typ. Al value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
▼ 0	600	N49	B66413-G-X149	20					
▼ 0	800	N87	B66413-G-X187	20					

Coil former made of GFR thermosetting plastic (UL 94 V-0)

B 66 414

Sections	A _N mm ²	Pins							
▼ 1	15,8	8	B66414-A1008-D1	20					

Yoke

B 66 414

▼ (required: 2 pcs/set)		B66414-A2000	40						
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EFD 20 cores

B 66 417

Dimension "g" mm	Typ. Al value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
▼ 0	910	N49	B66417-G-X149	20					
▼ 0	1200	N87	B66417-G-X187	20					

Coil former made of GFR thermosetting plastic (UL 94 V-0)

B 66 418

Sections	A _N mm ²	Pins							
▼ 1	28,1	8	B66418-A1008-D1	20					

Yoke

B 66 418

▼ (required: 2 pcs/set)		B66418-A2000	40						
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¹⁾ EFD cores are delivered in single pieces (not in sets).
The tabulated Al value applies to a core set comprising two ungapped cores.

EFD 25
EFD 30

EFD 25 cores

B 66 421

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
▼ 0	2000	N87	B66421-G-X187	20					

Coil former made of GFR thermosetting plastic (UL 94 V-0)

B 66 422

Sections	A _N mm ²	Pins							
▼ 1	40,7	10	B66422-A1010-D1	20					

Yoke

B 66 422

▼ (required: 2 pcs/set)		B66422-A2000	40						
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EFD 30 cores

B 66 423

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
▼ 0	2150	N87	B66423-G-X187	20					

Coil former made of GFR thermosetting plastic (UL 94 V-0)

B 66 424

Sections	A _N mm ²	Pins							
▼ 1	52,3	12	B66424-A1012-D1	20					

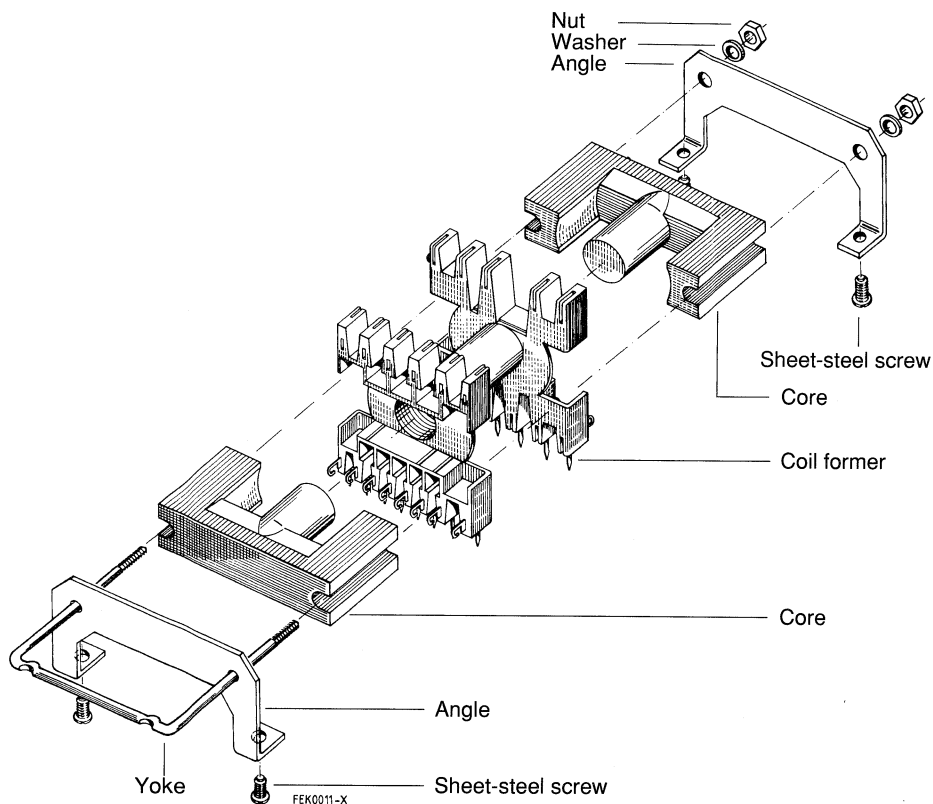
Yoke

B 66 424

▼ (required 2 pcs/set)		B66424-A2000	40						
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¹⁾ EFD cores are delivered in single pieces (not in sets).
The tabulated AL value applies to a core set comprising two ungapped cores.

Example of an assembly set



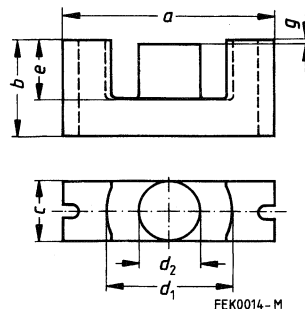
Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾	Special features
EC 35	47 × 36 × 28	Coil former with horizontal magnetic axis
EC 41	52,5 × 47,5 × 42 47,5 × 42 × 44	Coil former with horizontal magnetic axis Coil former with vertical magnetic axis
EC 52	61 × 57,5 × 43,5 54 × 52,5 × 53	Coil former with horizontal magnetic axis Coil former with vertical magnetic axis
EC 70	82 × 81 × 48,5 72 × 57,5 × 75	Coil former with horizontal magnetic axis Coil former with vertical magnetic axis

¹⁾ Height above mounting plane

EC Cores

EC cores (in accordance with IEC 647) with large winding space. The round center leg is particularly suitable for the use of thick winding wires.



Dimensions (mm)

Core type	a	b	c	d_1	d_2	e
EC 35	$34,5 \pm 0,8$	$17,45 - 0,3$	$9,80 - 0,6$	$22,75 \pm 0,55$	$9,80 - 0,6$	$11,9 + 0,7$
EC 41	$40,6 \pm 1,0$	$19,65 - 0,3$	$11,90 - 0,6$	$27,05 \pm 0,75$	$11,90 - 0,6$	$13,5 + 0,8$
EC 52	$52,2 \pm 1,3$	$24,35 - 0,3$	$13,75 - 0,7$	$33,00 \pm 0,9$	$13,75 - 0,7$	$15,5 + 0,8$
EC 70	$70,0 \pm 1,7$	$34,65 - 0,3$	$16,80 - 0,8$	$44,50 \pm 1,2$	$16,80 - 0,8$	$22,3 + 0,9$

Magnetic characteristics and weight

Core type	Magnetic characteristics (per set)					Approx. weight/pc. g
	$\Sigma l/A$ mm^{-1}	l_e mm	A_e mm^2	A_{min} mm^2	V_e mm^3	
EC 35	0,918	77,4	84,3	71	6530	18
EC 41	0,735	89,3	121	106	10800	26
EC 52	0,580	105	180	141	18800	55
EC 70	0,514	144	279	211	40100	126

EC 35 cores in accordance with IEC 647

B 66 337

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	2100	N27	B66337-G-X127	20					
0,10 ± 0,02	680	N27	B66337-G100-X127	20					
0,25 ± 0,02	345	N27	B66337-G250-X127	20					
0,50 ± 0,05	205	N27	B66337-G500-X127	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0), 1 section

B 66 272

Version	A _N mm ²	Termi- nals							
with solder tags									
horizontal	97	11	B66272-C1001-T1	20					
horizontal	97	13	B66272-C1002-T1	20					
with solder pins									
horizontal	97	13	B66272-J1013-T1	20					

EC 41 cores in accordance with IEC 647

B 66 339

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	2700	N27	B66339-G-X127	20					
0,50 ± 0,05	280	N27	B66339-G500-X127	20					
1,0 ± 0,05	170	N27	B66339-G1000-X127	20					

Coil formers made of GFR poyterephthalate (UL 94 V-0), 1 section

B 66 274

Version	A _N mm ²	Termi- nals							
horizontal	134	9	B66274-B1001-T1	20					
horizontal	134	12	B66274-B1002-T1	20					
vertical	134	12	B66274-B1012-T1	20					

Mounting assemblies (incl. screws and nuts)

B 66 274

for horizontal version	B66274-B2001	20						
for vertical version	B66274-B2002	20						

¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

EC 52 cores in accordance with IEC 647

B 66 341

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3400	N27	B66341-G-X127	10					
0,50 ± 0,05	370	N27	B66341-G500-X127	10					
1,00 ± 0,05	225	N27	B66341-G1000-X127	10					
1,50 ± 0,05	165	N27	B66341-G1500-X127	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0), 1 section

B 66 276

Version	AN mm ²	Termi- nals							
horizontal	212	11	B66276-B1001-T1	10					
horizontal	212	14	B66276-B1002-T1	10					
vertical	212	11	B66276-B1011-T1	10					
vertical	212	14	B66276-B1012-T1	10					

Mounting assemblies (incl. screws and nuts)

B 66 276

for horizontal version	B66276-B2001	10						
for vertical version	B66276-B2002	10						

EC 70 cores in accordance with IEC 647

B 66 343

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3900	N27	B66343-G-X127	10					

Coil formers made of GFR polyterephthalate (UL 94 V-0), 1 section

B 66 278

Version	AN mm ²	Termi- nals							
horizontal	469	15	B66278-B1001-T1	10					
horizontal	469	19	B66278-B1002-T1	10					
vertical	469	15	B66278-B1011-T1	10					
vertical	469	19	B66278-B1012-T1	10					

Mounting assemblies (incl. screws and nuts)

B 66 278

for horizontal version	B66278-B2001	10						
for vertical version	B66278-B2002	10						

¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

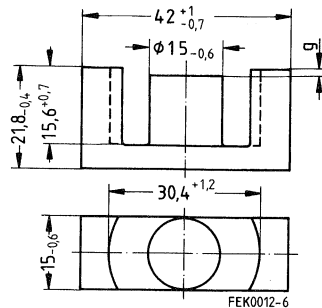
ER Cores

**For compact winding design
with low stray inductance**

Magnetic characteristics (per set)

$$\begin{aligned}\Sigma l/A &= 0,58 \text{ mm}^{-1} \\ l_e &= 99 \text{ mm} \\ A_e &= 170 \text{ mm}^2 \\ A_{\min} &= 170 \text{ mm}^2 \\ V_e &= 16800 \text{ mm}^3\end{aligned}$$

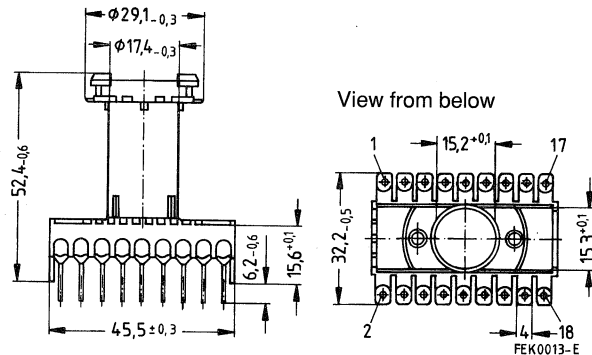
Approx. weight 42 g/pc



ER 42 cores

B 66 347

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3200	N27	B66347-G-X127	20					
$1,0 \pm 0,05$	260	N27	B66347-G1000-X127	20					



Coil former made of GFR polyterephthalate (UL 94 V-0)

B 66 348

Sections	AN mm ²	Pins	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
1	127	18	B66348-A1018-T1	20					

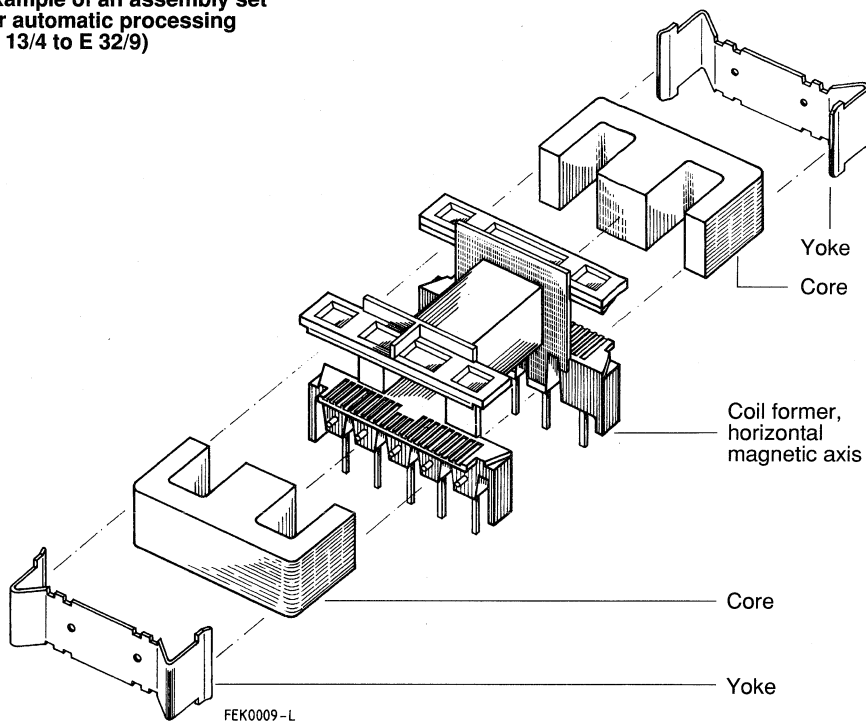
Height above mounting plane:

Length × width × height (above mounting plane): 33 mm × 46 mm × 55 mm

¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) must be ordered.
With both cores the typical AL value specified will be obtained.

E Cores

**Example of an assembly set
for automatic processing
(E 13/4 to E 32/9)**

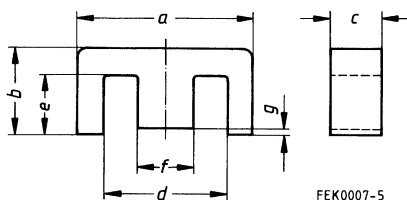


Mounting dimensions of the assembly set (mm)

Core type	Length × width × height ¹⁾	Special features	Core type	Length × width × height ¹⁾	Special features
E 6,3/2	6,6 × 9 × 4,9	SMD (not illustrated here)	E 25/7 (EF 25)	28 × 28 × 21 18 × 28 × 29	horizontal vertical
E 8,8/2	9,5 × 12,3 × 5,2		E 30/7	32 × 36 × 12 19 × 36 × 36	horizontal vertical
E 13/4 (EF 12,6)	15 × 17 × 12 10 × 15 × 17 13 × 19,5 × 9	horizontal vertical SMD	E 32/9 (EF 32)	35 × 37 × 24	Coil formers with deviating shape (not illustrated here)
E 16/5 (EF 16)	18 × 20 × 14 11 × 18 × 20	horizontal vertical	E 42/15	42,5 × 43 × 33	
E 20/6 (EF 20)	22 × 22 × 17 15 × 22 × 24	horizontal vertical w. angular pins	E 42/20	38 × 46 × 52	
	24 × 21,5 × 14		E 55/21	56 × 57 × 46	

E Cores

E cores with square-shaped center leg, most types in accordance with DIN 41 295 or DIN 41 985. Small cores are also suitable for small-signal applications and EMI/RFI suppression. E 6,3/2 to E 13/4 cores are available with SMD coil former, E 13/4 to E 32/9 cores with accessories for automatic processing (see exploded view).



FEK0007-5

Dimensions (mm)

Core type	a	b	c	d	e	f
E 6,3/2	6,3 - 0,25	2,9 - 0,1	2,0 - 0,1	3,6 + 0,2	1,85 + 0,1	1,4 - 0,1
E 8,8/2	9,0 ± 0,4	4,1 - 0,2	2,0 - 0,2	5,2 ± 0,13	2,03 + 0,25	1,9 ± 0,12
E 13/4 (EF 12,6)	12,6 + 0,5/-0,4	6,5 - 0,2	3,7 - 0,3	8,9 + 0,6	4,5 + 0,3	3,7 - 0,3
E 16/5 (EF 16)	16,0 + 0,7/-0,5	8,2 - 0,3	4,7 - 0,4	11,3 + 0,6	5,7 + 0,4	4,7 - 0,3
E 20/6 (EF 20)	20,4 - 0,8	10,2 - 0,4	5,9 - 0,5	14,1 + 0,6	7,0 + 0,4	5,9 - 0,4
E 25/7 (EF 25)	25,0 + 0,8/-0,7	12,8 - 0,5	7,5 - 0,6	17,5 + 0,8	8,7 + 0,5	7,5 - 0,5
E 30/7	30,0 + 0,8/-0,6	15,2 - 0,4	7,3 - 0,5	19,5 + 0,8	9,7 + 0,6	7,2 - 0,5
E 32/9 (EF 32)	32,0 + 0,9/-0,7	16,4 - 0,6	9,5 - 0,7	22,7 + 1,0	11,2 + 0,6	9,5 - 0,6
E 42/15	42,0 + 1,0/-0,7	21,4 - 0,4	15,2 - 0,5	29,5 + 1,2	14,8 + 0,7	12,2 - 0,5
E 42/20	42,0 + 1,0/-0,7	21,2 - 0,4	20,0 - 0,8	29,5 + 1,2	14,8 + 0,7	12,2 - 0,5
E 55/21	55,0 + 1,2/-0,9	27,8 - 0,6	21,0 - 0,6	37,5 + 1,2	18,5 + 0,8	17,2 - 0,5
E 65/27	65,0 + 1,5/-1,2	32,8 - 0,6	27,4 - 1,0	44,2 + 1,8	22,2 + 0,8	20,0 - 0,7

Magnetic characteristics and weight

Core type	Magnetic characteristics (per set)					Approx. weight/pc. g
	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	A_{min} mm ²	V_e mm ³	
E 6,3/2	3,7	12,6	3,4	2,6	42,8	0,12
E 8,8/2	3,1	15,5	5,0	3,6	77,5	0,3
E 13/4 (EF 12,6)	2,28	29,6	13,0	12,2	384	1,0
E 16/5 (EF 16)	1,87	37,6	20,1	19,4	754	2,3
E 20/6 (EF 20)	1,34	44,9	33,5	31,6	1500	3,7
E 25/7 (EF 25)	1,09	57,5	52,5	51,5	3020	8
E 30/7	1,12	67	60,0	49,0	4000	11
E 32/9 (EF 32)	0,894	74	83	81,4	6180	17
E 42/15	0,535	97	178	175	17600	44
E 42/20	0,405	97	240	229	23300	58
E 55/21	0,34	120	354	351	42500	108
E 65/27	0,27	147	535	529	78420	197

E 6,3/2**E 8,8/2****E 6,3/2 cores****B 66 300**

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	100 +	250 +	500 +	1000 +
0	380	N67	B66300-G-X167	50					
0	700	N30	B66300-G-X130	50					
0	1700	T38	B66300-G-X138	50					

Coil formers made of liquid crystal polymer (UL 94 V-0) for SMD technology**B 66 301**

Sections	A _N mm ²	Termi- nals							
▽ 1	2,1	4	B66301-B1004-T1	50					
▽ 1	2,1	6	B66301-B1006-T1	50					
▽ 2	1,2	4	B66301-B1004-T2	50					
▽ 2	1,2	6	B66301-B1006-T2	50					

Cover cap**B 66 301**

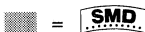
▼ Made of plastic	B66301-B2000	50							
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E 8,8/2 cores**B 66 302**

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	100 +	250 +	500 +	1000 +
0	550	N67	B66302-G-X167	50					
0	1000	N30	B66302-G-X130	50					
0	2100	T38	B66302-G-X138	50					

Coil formers made of liquid crystal polymer (UL 94 V-0) for SMD technology**B 66 302**

Sections	A _N mm ²	Termi- nals							
▽ 1	2,79	8	B66302-C1008-T1	50					
▽ 2	2,2	8	B66302-C1008-T2	50					



¹⁾ E cores are delivered in single pieces (not in sets). The tabulated AL value applies to a core set comprising two ungapped cores.

Cores in accordance with DIN 41 985

B 66 305

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	800	N27	B66305-G-X127	25					
0	830	N67	B66305-G-X167	25					
0	1000	N30	B66305-G-X130	25					
0,04 ± 0,01	250	N27	B66305-G40-X127	25					

Coil formers

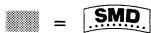
B 66 202, B 66 306

Sections	AN mm ²	Pins							
Made of GFR polyterephthalate (UL 94 V-0), horizontal version									
1	11,6	8	B66202-A1108-T1	25					
Made of GFR polyterephthalate (UL 94 V-0), vertical version									
1	11,6	6	B66202-J1106-T1	25					
Made of liquid crystal polymer (UL 94 V-0), for SMD technology									
1	13,0	10	B66306-B1010-T1	25					
2	10,2	10	B66306-B1010-T2	25					

Yoke (for horizontal and vertical version)

B 66 202

(required: 2 pcs/set)	B66202-A2010	50							
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered. With both cores the typical AL value specified will be obtained.

E 16/5 (EF 16)

Cores in accordance with DIN 41 985

B 66 307

Dimension "g" mm	Typ. A _L value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	1000	N27	B66307-G-X127	25					
0	1040	N67	B66307-G-X167	25					
0	1400	N30	B66307-G-X130	25					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 66 308

Version	Sec- tions	A _N mm ²	Pins						
horizontal	1	22,3	8	B66308-A1108-T1	25				
vertical	1	22,3	8	B66308-J1108-T1	25				

Yoke

B 66 308

(required: 2 pcs/set)	B66308-A2010	50					
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
With both cores the typical A_L value specified will be obtained.

Cores in accordance with DIN 41 985
B 66 311

Dimension "g" mm	Typ. Al. value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	1300	N27	B66311-G-X127	25					
0	1470	N67	B66311-G-X167	25					
0	2500	N30	B66311-G-X130	25					
0,09 ± 0,01	330	N27	B66311-G90-X127	20					
0,17 ± 0,02	210	N27	B66311-G170-X127	20					
0,50 ± 0,05	100	N27	B66311-G500-X127	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0)
B 66 206

Version	Sec- tions	A _N mm ²	Pins						
horizontal	1	34	10	B66206-A1110-T1	20				
vertical	1	34	10	B66206-J1110-T1	20				
With angular pins									
horizontal	1	34	12	B66206-B1012-T1	20				

Yoke suitable for both coil formers
B 66 206

(required: 2 pcs/set)	B66206-A2010	20							
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
With both cores the typical Al. value specified will be obtained.

Cores in accordance with DIN 41 985

B 66 317

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	1750	N27	B66317-G-X127	25					
0	1800	N67	B66317-G-X167	25					
0	3100	N30	B66317-G-X130	20					
0,10 ± 0,02	490	N27	B66317-G100-X127	20					
0,16 ± 0,02	350	N27	B66317-G160-X127	20					
0,50 ± 0,05	150	N27	B66317-G500-X127	20					
1,00 ± 0,05	90	N27	B66317-G1000-X127	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 66 208

Version	Sec- tions	AL mm ²	Pins						
horizontal	1	56	10	B66208-A1110-T1	20				
vertical	1	56	10	B66208-J1110-T1	20				

Yoke

B 66 208

(required: 2 pcs/set)	B66208-A2010	40					
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
With both cores the typical AL value specified will be obtained.

E 30/7
E 32/9 (EF 32)

E 30/7 cores in accordance with DIN 41 295

B 66 319

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	1800	N27	B66319-G-X127	20					
0	1850	N67	B66319-G-X167	20					
0	3300	N30	B66319-G-X130	20					
0,10 ± 0,02	460	N27	B66319-G100-X127	20					
0,34 ± 0,02	195	N27	B66319-G340-X127	20					

Coil formers made of GFR polyterephthalate (UL 94 V-0)

B 66 232

Version	Sec- tions	AN mm ²	Pins						
horizontal	1	56	14	B66232-A1114-T1	20				
vertical	1	56	12	B66232-J1112-T1	20				

Yoke

B 66 232

(required: 2 pcs/set)	B66232-A2010	40						
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E 32/9 cores in accordance with DIN 41 985

B 66 229

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	2200	N27	B66229-G-X127	20					
0	2350	N67	B66229-G-X167	20					
0	3800	N30	B66229-G-X130	20					
0,5 ± 0,05	247	N27	B66229-G500-X127	20					
1,0 ± 0,05	150	N27	B66229-G1000-X127	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)

B 66 230

Version	Sec- tions	AN mm ²	Pins						
horizontal	1	108,5	14	B66230-A1114-T1	20				

Yoke

B 66 230

(required: 2 pcs/set)	B66230-A2010	40						
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¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
 With both cores the typical AL value specified will be obtained.

E 42/15
E 42/20

E 42/15 cores in accordance with DIN 41 295

B 66 325

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	3500	N27	B66325-G-X127	20					
0	3800	N67	B66325-G-X167	20					
0,25 ± 0,02	760	N27	B66325-G250-X127	20					
0,64 ± 0,05	380	N27	B66325-G640-X127	20					
1,00 ± 0,05	270	N27	B66325-G1000-X127	20					

Coil former made of GFR 6-polyamide (UL 94 V-0)
(Without illustration)

B 66 242

Sections	A _N mm ²	Pins							
1	177	10	B66242-J1000-R1	20					

E 42/20 cores in accordance with DIN 41 295

B 66 329

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	4750	N27	B66329-G-X127	20					
0	5100	N67	B66329-G-X167	20					
0,5 ± 0,05	600	N27	B66329-G500-X127	20					
1,0 ± 0,05	355	N27	B66329-G1000-X127	20					
1,5 ± 0,05	260	N27	B66329-G1500-X127	20					

Coil former made of GFR polyterephthalate (UL 94 V-0)
(Without illustration)

B 66 243

Sections	A _N mm ²	Pins							
1	172	18	B66243-A1018-T1	20					

¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
With both cores the typical AL value specified will be obtained.

E 55/21 cores in accordance with DIN 41 295

B 66 335

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	5800	N27	B66335-G-X127	10					
0,5 ± 0,05	840	N27	B66335-G500-X127	10					
1,0 ± 0,05	500	N27	B66335-G1000-X127	10					
1,5 ± 0,05	360	N27	B66335-G1500-X127	10					
2,0 ± 0,05	300	N27	B66335-G2000-X127	10					

Coil former made of GFR 6-polyamide (UL 94 V-0)
(Without illustration)

B 66 252

Sections	A _N mm ²	Pins							
1	280	14	B66252-B-M1	10					

E 65/27 cores in accordance with DIN 41 295

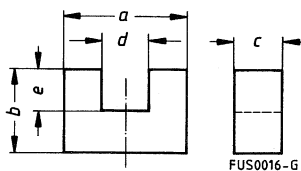
B 66 387

Dimension "g" mm	Typ. AL value nH	Mate- rial	Ordering code ¹⁾	Min. qty.	Price each				
					Min. qty. +	50 +	100 +	250 +	500 +
0	7200	N27	B66387-G-X127	10					
0,5 ± 0,05	1290	N27	B66387-G500-X127	10					
1,0 ± 0,05	743	N27	B66387-G1000-X127	10					
1,5 ± 0,05	539	N27	B66387-G1500-X127	10					

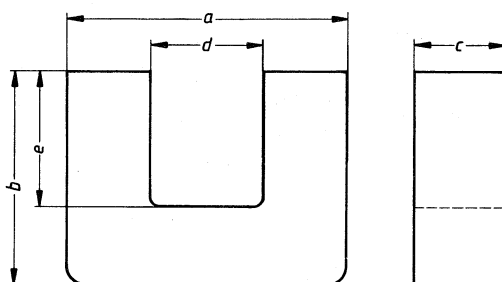
¹⁾ For a gapped core (dimension "g") the matching ungapped core (dimension "g" = 0) has to be ordered.
With both cores the typical AL value specified will be obtained.

U and UI Cores

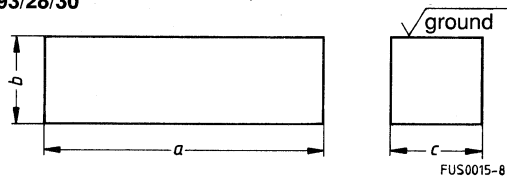
U 15, U 20, U 25



U 93/76/30



I 93/28/30



Dimensions (mm)

Core type	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
U 15	15,2 ± 0,7	11,2 ± 0,5	6,7 – 0,5	5,2 ± 0,3	5,9 + 0,5
U 20	20,8 ± 0,6	15,9 – 0,6	7,7 – 0,6	6,3 ± 0,3	8,0 + 0,6
U 25	24,8 ± 0,2	20,0 – 1,0	13,0 – 0,5	8,2 ± 0,3	11,0 + 0,5
U 93/76/30	93,0 ± 1,8	76,0 ± 0,5	30,0 ± 0,6	> 34,6	48,0 ± 0,9
I 93/28/30	93,0 ± 1,8	28,0 ± 0,5	30,0 ± 0,6	–	–

Magnetic characteristics and weight

Core type	Magnetic characteristics (per set)				Approx. weight g
	$\Sigma l/A$ mm ⁻¹	<i>l_e</i> mm	<i>A_e</i> mm ²	<i>V_e</i> mm ³	
U 15	1,5	48	32	1540	4,3 (piece)
U 20	1,236	68	55	3700	9 (piece)
U 25	0,819	86	105	9000	23 (piece)
U 93/152/30	0,4214	354	840	297000	1500 (set)
U 93/104/30	0,3071	258	840	216000	1100 (set)

U 15, U 20, U 25
U 93/76/30, I 93/28/30

U cores with rectangular cross section for energy-storage chokes and transformers

Typ. AL value nH	Material	Ordering code ¹⁾	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +

U 15

B 67 350

1200	N27	B67350-A1-X27	50					
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U 20 (Dimensions in accordance with DIN 41 296)

B 67 348

1600	N27	B67348-A1-X27	50					
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U 25

B 67 352

2500	N27	B67352-A1-X27	25					
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U cores with rectangular cross section for power transformers

Typ. AL value nH	Material	Ordering code ¹⁾	Min. qty.	Price each				
				Min. qty. +	5 +	10 +	20 +	50 +

U 93/76/30¹⁾

B 67 345

4700	N27	B67345-B1-X27	1					
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I 93/28/30²⁾

B 67 345

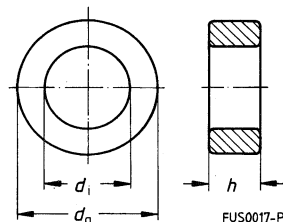
6500	N27	B67345-B2-X27	1					
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- ¹⁾ U and I cores are delivered in pieces (not in sets). The tabulated AL value applies to an U core set comprising two ungapped cores.
²⁾ The tabulated AL value applies to a core set comprising one U core and one I core (combination UI 93/104/30) without air gap.

Ring Cores

Coated ring cores

are primarily used for pulse and broadband transformers as well as for balanced mixers and chokes.



Core type	Dimensions			Magnetic characteristics				Approx. weight g
	d_a mm	d_i mm	h mm	$\Sigma l/A$ mm ⁻¹	l_e mm	A_e mm ²	V_e mm ³	
R 2,5 ¹⁾	2,5 ± 0,12	1,5 ± 0,1	1,0 ± 0,1	12,30	6,06	0,53	3,0	0,02
R 4 ¹⁾	4,95 max.	1,45 min.	2,5 max.	7,69	9,67	1,30	12,1	0,07
R 6,3 ¹⁾	7,25 max.	2,85 min.	3,4 max.	4,97	15,25	3,10	46,6	0,3
R 10 ¹⁾	11,0 max.	5,05 min.	4,95 max.	3,07	24,12	7,87	188	0,9
R 12,5	13,6 max.	6,5 min.	5,95 max.	2,46	30,14	12,28	368	2,0
R 16 ¹⁾	17,2 max.	8,5 min.	7,3 max.	1,95	38,56	19,77	760	3,0
R 20/7	21,2 max.	8,75 min.	8,2 max.	1,30	43,60	33,68	1465	8,0
R 25/10	26,8 max.	13,5 min.	11,0 max.	1,17	60,11	51,31	3079	16,0
R 34/10	35,5 max.	19,2 min.	11,1 max.	1,24	82,11	66,12	5420	26,0
R 34/12,5	35,5 max.	19,2 min.	13,6 max.	0,99	82,11	82,64	6780	33,0
R 36	37,5 max.	21,7 min.	16,2 max.	0,94	89,70	95,93	8600	40,0
R 40	42,0 max.	22,5 min.	17,2 max.	0,77	96,30	125,30	12060	63,0
R 42	43,6 max.	24,8 min.	13,6 max.	1,08	103,07	95,80	9860	45,0
R 50	51,8 max.	28,5 min.	21,3 max.	0,62	120,40	196,00	23555	120,0
R 58	60,1 max.	39,2 min.	18,8 max.	1,00	152,40	152,40	23220	110,0

Version	Ordering code
– polyamide-coated, thickness of coating 0,2 to 0,4 mm	B64290-K ...
– lacquer-coated, thickness of coating < 0,1 mm (R 2,5; R 4)	B64290-J ...

- polyamide-coated, thickness of coating 0,2 to 0,4 mm
 – lacquer-coated, thickness of coating < 0,1 mm (R 2,5; R 4)

1) Internal and external diameters comply with IEC 525, core heights deviate by:

	IEC	Siemens
Core height h	$\frac{d_i}{2}$	$\frac{d_i}{1,5}$

Ring Cores

Type	A _L value	Ordering code	Min. qty.	Price each			
	nH			Min. qty. +	50 +	100 +	250 + 500 +

Material N 27 ($\mu_i = 2000$)

R 12,5	> 770	B64290-K44-X27	20				
R 16	> 970	B64290-K45-X27	20				
			Min. qty.	Min. qty. +	20 +	50 +	100 + 250 +
R 25/10	> 1520	B64290-K618-X27	10				

Material N 30 ($\mu_i = 4300$, tolerance of A_L value = $\pm 25\%$)

			Min. qty.	Min. qty. +	100 +	250 +	500 + 1000 +
R 2,5	440	B64290-J35-X830	50				
R 4	710	B64290-J36-X830	50				
			Min. qty.	Min. qty. +	50 +	100 +	250 + 500 +
R 6,3	1090	B64290-K37-X830	25				
R 10	1760	B64290-K38-X830	25				
R 12,5	2210	B64290-K44-X830	20				
R 16	2770	B64290-K45-X830	20				
R 20/7	4100	B64290-K632-X830	20				
			Min. qty.	Min. qty. +	20 +	50 +	100 + 250 +
R 25/10	4600	B64290-K618-X830	10				
R 34/10	4700	B64290-K58-X830	5				
R 34/12,5	5300	B64290-K48-X830	5				
R 36	5780	B64290-K674-X830	10				
R 40	6900	B64290-K659-X830	10				
R 42	5000	B64290-K22-X830	5				
R 50	8700	B64290-K82-X830	5				
R 58	5400	B64290-K40-X830	2				

Ring Cores

Type	A _L value	Ordering code	Min. qty.	Price each				
	nH			Min. qty. +	20 +	50 +	100 +	250 +

Material T 35 ($\mu_i = 6000$, tolerance of A_L value = + 25/– 30%)

R 20/7	5800	B64290-K632-X35	20					
R 25/10	6100	B64290-K618-X35	10					

Material T 38 ($\mu_i = 10000$, tolerance of A_L value = + 30/– 40%)

			Min. qty.	Min. qty. +	100 +	250 +	500 +	1000 +
R 2,5	1030	B64290-J35-X38	50					
R 4	1640	B64290-J36-X38	50					
			Min. qty.	Min. qty. +	50 +	100 +	250 +	500 +
R 6,3	2540	B64290-K37-X38	25					
R 10	4100	B64290-K38-X38	20					

Double-Aperture Cores

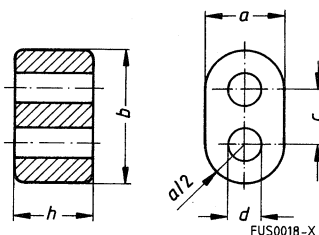
Primarily for broadband transformers up to high frequencies

Application examples:

Material N 30
for low frequencies and for
pulse applications

Material K 1
for matching transformers and
balancing mixers up to approx. 250 MHz
in antenna feeders or input circuits
of VHF and TV receivers

Material U 17
for the same applications up to 500 MHz



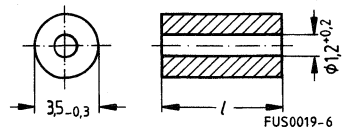
Dimensions (mm)					Magnetic characteristics ²⁾				Appr. weight g
<i>h</i>	<i>b</i>	<i>a</i>	<i>c</i>	<i>d</i>	$\Sigma l/A$ mm ⁻¹	<i>l_e</i> mm	<i>A_e</i> mm ²	<i>V_e</i> mm ³	
14,5 – 1,0 ¹⁾	14,5 – 1,0	8,5 – 0,5	5,85 + 0,25	3,4 + 0,8	0,32	48,7	15,9	744	4,0
8,3 – 0,6 ¹⁾	14,5 – 1,0	8,5 – 0,5	5,85 + 0,25	3,4 + 0,6	0,54	28,8	15,7	435	2,5
6,2 – 0,5 ¹⁾	7,25 – 0,5	4,2 – 0,4	2,90 + 0,15	1,7 + 0,3	0,745	10,7	8,1	78	0,4
2,5 – 0,3	3,6 – 0,3	2,1 – 0,3	1,45 + 0,1	0,8 + 0,15	1,76	2,6	4,2	8,4	0,1

Core height mm	AL value appr. nH	Mate- rial	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	50 +	100 +	250 +	500 +
14,5	320	K1	B62152-A1-X1	20					
8,3	28	U17	B62152-A4-X17	25					
	195	K1	B62152-A4-X1	25					
	10000	N30	B62152-A4-X30	25					
6,2	20	U17	B62152-A7-X17	100					
	140	K1	B62152-A7-X1	100					
	7350	N30	B62152-A7-X30	100					
2,5	9	U17	B62152-A8-X17	100					
	3100	N30	B62152-A8-X30	100					

¹⁾ Magnetic characteristics and AL values are based on winding of center leg.

Shielding Beads

In accordance with IEC 220
For the short-wave range up
to the ultra-short wave range



Material	Length mm	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	500 +	1000 +	5000 +	10000 +
N22	3,3 – 0,5	B62110-A3011-X22	250					
	5,2 – 0,5	B62110-A3007-X22	250					
	8,0 – 0,6	B62110-A3063-X22	250					

Surface Acoustic Wave Components

Contents	Type	Page
Surface acoustic wave filters		
TV IF intercarrier filters (SIP5L)	OFW D 1954	111
	OFW G 1872	111
	OFW G 1962	111
	OFW G 1968	111
	OFW J 1951	111
	OFW J 1953	111
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	OFW M 1958	111
	OFW M 1963	111
TV IF intercarrier filters (SIP5K)	OFW G 1956 M	112
	OFW G 1959 M	112
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Satellite IF filter (SIP5K)	OFW Y 6960 M	112
TV IF quasi/parallel sound filters (DIP10)	OFW G 3254	113
	OFW G 3255	113
	OFW G 3264	113
	OFW G 3352	113
	OFW J 3251	113
	OFW J 3252	113
	OFW J 3351	113
	OFW M 3252	113
	OFW M 3351	113
TV IF video filters (DIP10)	OFW G 3450	113
	OFW K 6253	113
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TV vestigial sideband filters (SIP5L)	OFW G 4903	114
	OFW G 4952	114
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	OFW B 531	115
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	OFW R 2527	117
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	OFW R 2530	117

▼ Newly included in this edition	Type	Page
TV IF intercarrier filters	OFW J 1955	111
	OFW K 2954	111
	OFW G 1956 M	112
	OFW G 1959 M	112
	OFW G 1962 M	112
Satellite IF filter	OFW Y 6960 M	112
TV IF quasi/parallel sound filter	OFW G 3264	113
TV IF video filters	OFW K 6253	113
	OFW G 3963	114
Surface acoustic wave resonator	OFW R 2530	117

Further technical literature

Data Book "SAW Filters for TV Applications", B5-P2005-X-X-7600
 Data Book "SAW Filters for TV Applications", Supplementary Volume, B5-P2011-X-X-7600
 Short Form Catalog "SAW Vestigial Sideband and Nyquist Filters", B5-P2010-X-X-7400
 Short Form Catalog "SAW Filters for CCIR Multi-Standard IF Concepts", B4-B3805-X-X-7600
 Short Form Catalog "SAW Bandpass Filters in Metal Packages for Professional Applications", B4-B3990-X-X-7400
 Short Form Catalog "SAW Clock Recovery Filters for Regenerators in Digital Data Transmission Systems", B5-P2008-X-X-7600
 Product Survey "SAW Resonators on Quartz from 200 MHz up to 1000 MHz", B5-P2009-X-X-7400
 Advertising Brochure "An Allround Solution: Switch-Selected SAW Filters for Multi-Standard TV", B5-P5012-X-X-7400

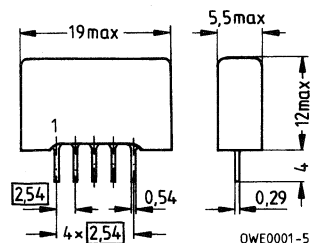
Surface Acoustic Wave Components

TV IF intercarrier filters

Plastic case SIP5L

Pin configuration:

- 1 Input
- 2 Input - ground
- 3 Chip carrier - ground
- 4 Output
- 5 Output



Dimensions in mm

Type	Standard	Ordering code	Min. qty.	Price each				
				Min. qty. +	20 +	50 +	100 +	250 +
OFW ...	Picture carrier							
D1954	D/K 38,0 MHz	B39380-D1954-N100	10					
G1872	B/G 38,9 MHz	B39389-G1872-N200	10					
G1962	B/G 38,9 MHz	B39389-G1962-N100	10					
G1968	B/G 38,9 MHz	B39389-G1968-N100	10					
J1951	I 39,5 MHz	B39395-J1951-N100	10					
J1953	I 39,5 MHz	B39395-J1953-N100	10					
▼ J1955	I 38,9 MHz	B39389-J1955-N100	10					
▼ K2954	D/K 38,0 MHz	B39380-K2954-N100	10					
L3952	L/E 32,7 MHz	B39327-L3952-N100	10					
M1958	M/N 45,75 MHz	B39458-M1958-N100	10					
M1963	M/N 45,75 MHz	B39458-M1963-N100	10					

Surface Acoustic Wave Components

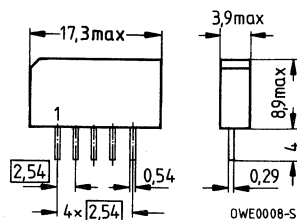
TV IF intercarrier filters

Satellite IF filter

Plastic case SIP5K

Pin configuration:

- 1 Input
- 2 Input - ground
- 3 Chip carrier - ground
- 4 Output (- ground for Y6960M)
- 5 Output



DWE0008-S

Dimensions in mm

Type	Standard	Ordering code	Min. qty.	Price each				
OFW ...	Picture carrier			Min. qty. +	20 +	50 +	100 +	250 +

TV IF intercarrier filters

▼ G1956M	B/G 38,9 MHz	B39389-G1956-M100	10					
▼ G1959M	B/G 38,9 MHz	B39389-G1959-M100	10					
▼ G1962M	B/G 38,9 MHz	B39389-G1962-M100	10					

Type	Center frequency	Ordering code	Min. qty.	Price each				
OFW ...	Bandwidth			Min. qty. +	10 +	20 +	50 +	100 +

Satellite IF filter

▼ Y6960M	118,0 MHz 10 MHz	B39118-Y6960-M100	5					
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Surface Acoustic Wave Components

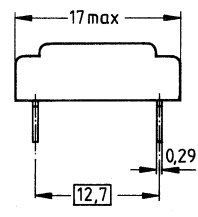
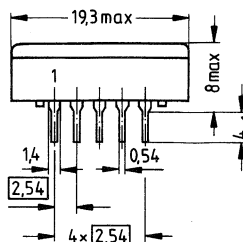
TV IF quasi/parallel sound filters

TV IF video filters

Plastic case DIP10

Pin configuration:

- 1 Input
- 2 Input - ground
- 3; 8 Chip carrier - ground
- 4; 5 Output - sound (For G3450:
Output - M/N standard)
- 6; 7 Output - picture (For G3450:
Output - B/G standard)
- 10 Not connected



OWE0003-L

Dimensions in mm

Type	Standard	Ordering code	Min. qty.	Price each				
OFW ...	Picture carrier			Min. qty. +	20 +	50 +	100 +	250 +

TV IF quasi/parallel sound filters

G3254	B/G 38,9 MHz	B39389-G3254-P100	5					
G3255	B/G 38,9 MHz	B39389-G3255-P100	5					
▼ G3264	B/G 38,9 MHz	B39389-G3264-P100	5					
G3352	B/G 38,9 MHz	B39389-G3352-P100	5					
J3251	I 38,9 MHz	B39389-J3251-P100	5					
J3252	I 39,5 MHz	B39395-J3252-P100	5					
J3351	I 38,9 MHz	B39389-J3351-P100	5					
M3252	M/N 45,75 MHz	B39458-M3252-P100	5					
M3351	M/N 45,75 MHz	B39458-M3351-P100	5					

TV IF video filters

G3450	B/G 38,9 MHz	B39389-G3450-P100	5					
▼ K6253	L, L' B/G*) 38,9 MHz	B39389-K6253-P100	5					

*) Intercarrier filter

Surface Acoustic Wave Components

TV IF video filter

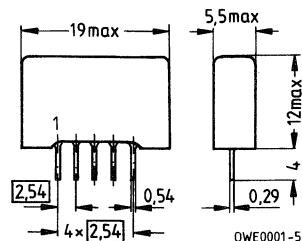
TV IF audio filter

TV vestigial sideband filters

Plastic case SIP5L

Pin configuration:

- 1 Input
- 2 Input - ground
- 3 Chip carrier - ground
- 4 Output
- 5 Output



Dimensions in mm

Type	Standard	Ordering code	Min. qty.	Price each				
OFW ...	Picture carrier			Min. qty. +	20 +	50 +	100 +	250 +

TV IF video filter

▼ G3963	B/G 38,9 MHz	B39389-G3963-N100	10					
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TV IF audio filter

K9253	B/G; D/K; I; M 38,9 MHz	B39389-K9253-N100	10					
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Type	Standard	Ordering code	Min. qty.	Price each				
OFW ...	Picture carrier			Min. qty. +	10 +	20 +	50 +	100 +

TV vestigial sideband filters

G4903	B/G 38,9 MHz	B39389-G4903-N100	5					
G4952	B/G 38,9 MHz	B39389-G4952-N100	5					
J4950	I 38,9 MHz	B39389-J4950-N100	5					

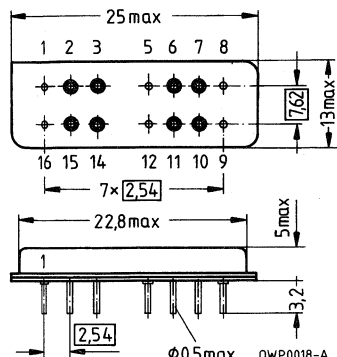
Surface Acoustic Wave Components

TV vestigial sideband filters

Metal case DIP 16

Pin configuration:

- 2 Input - ground
- 3 Input
- 10 Output - ground
- 11 Output
- 4; 13 Free
- 1; 5; 8; 9; 12; 16 Chip carrier - ground
(connected to case)
- 6; 7; 14; 15 Not connected



Dimensions in mm

Type	Standard	Ordering code	Min. qty.	Price each				
				Min. qty. +	5 +	10 +	20 +	50 +
OFW ...	Picture carrier							
B530 ¹⁾	B/G 38,9 MHz	B39390-B530-E110	1					
B531 ²⁾	B/G 38,9 MHz	B39390-B531-E110	1					

¹⁾ With sound carrier transmission

²⁾ Without sound carrier transmission

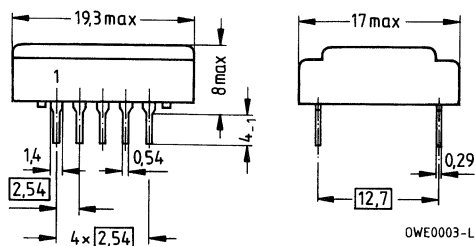
Surface Acoustic Wave Components

Satellite IF filter

Plastic case DIP10HF

Pin configuration:

- 2 Input
- 3 Input - ground
- 7 Output
- 8 Output - ground
- 1; 4; 5; 6; 10 Chip carrier - ground



Dimensions in mm

Type	Center frequency	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	20 +	50 +	100 +
OFW ...	Bandwidth							
Y6901	479.5 MHz 27 MHz	B39480-Y6901-H100	5					

Surface Acoustic Wave Components

Surface acoustic wave resonators

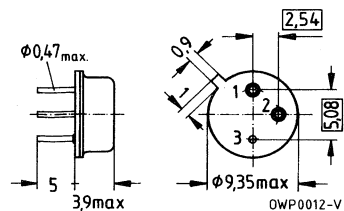
Metal case TO 39

Pin configuration:

1 Input

2 Output

3 Ground (connected to case)



Dimensions in mm

Type	Center frequency	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	20 +	50 +	100 +
OFW ...								
R2523	224,5 MHz	B39221-R2523-B110	5					
R2527	433,92 MHz	B39431-R2527-B110	5					
R2528	418,0 MHz	B39421-R2528-B110	5					
▼ R2530	315,0 MHz	B39321-R2530-B110	5					

NTC Thermistors

Contents	Type	Page
NTC thermistors		
for delayed operation and release of relays	A 34	121
for temperature compensation, »SMD«	C 620	122
	C 621	123
with indirect heating	F 75	124
for temperature compensation and measurement	K 11	125
as temperature sensors	K 17	126
with low time constant, miniature size	K 19	127
for temperature compensation and measurement	K 45	128
	K 164	129
as temperature sensors	K 227	131
	K 243	132
	K 252	133
	K 276	134
	K 277	135
as miniature sensors	K 295	136
	M 85	137
as temperature sensors	M 87	138
for temperature compensation and measurement	M 703	139
as miniature sensors	M 812	140
for temperature measurement	M 831	141
for high-precision temperature measurement	M 841	142
for high-precision temperature measurement, miniature size	M 867	143
as temperature sensors	M 891	144
for inrush current limiting	S 234	145
	S 235	146
	S 236	147
	S 364	148
for accurate temperature measurement, miniature size	S 863	149
	S 869	150
as temperature sensors	S 891	151
	Z 10	152

▼ Newly included in this edition

NTC thermistors		
for temperature compensation, »SMD«	C 620	122
	C 621	123
as temperature sensors	K 276	134
for temperature compensation and measurement	M 703	139
for temperature measurement	M 831	141
for inrush current limiting	S 235	146
	S 236	147
for accurate temperature measurement, miniature size	S 863	149
	S 869	150
as temperature sensors	S 891	151
	Z 10	152

Further technical literature

Data Book "NTC Thermistors", B4-B3401-X-X-7600

Short Form Catalog "NTC Thermistors", B4-B3444-X-X-7600

Data Sheet Collection "Surface-Mount Thermistors", B5-P2511-X-X-7600

Product Survey "Thermistors", B5-P2520-X-X-7400

Symbols and terms

R_H	Heater resistance
R_R	Rated resistance
R_5	Rated resistance at 5 °C
R_{20}	Rated resistance at 20 °C
R_{25}	Rated resistance at 25 °C
R_{100}	Rated resistance at 100 °C
R_{-25}	Rated resistance at – 25 °C
R_{-30}	Rated resistance at – 30 °C
T_R	Rated temperature
T_{25}	Rated temperature at 25 °C

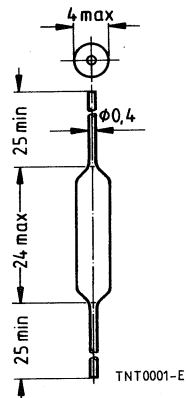
NTC Thermistors

**Thermistor for delayed operation and release,
e.g. of relays**

Glass case, hermetically sealed

Temperature range - 55 °C ... + 125 °C

Rated temperature + 20 °C



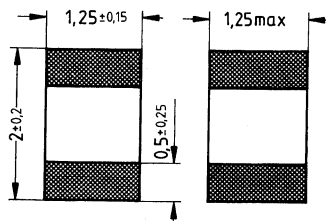
Dimensions in mm

Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 30\%$								
A34-2/30 a	5 k	Q63034-A1-J	5					
A34-2/30 b	5 k	Q63034-A1-M	5					
A34-4/20	15 k	Q63034-A2	5					
A34-5/15	40 k	Q63034-A3	5					
A34-7/10	100 k	Q63034-A5	5					
R_R tolerance $\pm 20\%$								
A34-6/40	6 k	Q63034-A4	5					
A34-10/25	40 k	Q63034-A6	5					
A34-14/30	40 k	Q63034-A7	5					
A34-25/18	200 k	Q63034-A8	5					

Chip thermistor for temperature compensation in hybrid and SMD circuits

Tape packaging in accordance with IEC 286-3, 8-mm blister tape

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



 Silver palladium termination TNT0033-H

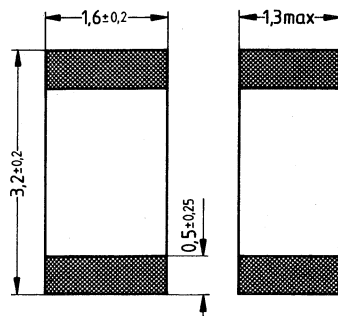
Dimensions in mm

Type	R ₂₅	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	250 +	500 +		
R _R tolerance ± 5 %								
C620/220 /5%	220	B57620-C221-J62	100					
C620/330 /5%	330	B57620-C331-J62	100					
C620/470 /5%	470	B57620-C471-J62	100					
C620/680 /5%	680	B57620-C681-J62	100					
C620/ 1k/5%	1 k	B57620-C102-J62	100					
C620/ 10k/5%	10 k	B57620-C103-J62	100					
C620/100k/5%	100 k	B57620-C104-J62	100					
R _R tolerance ± 10 %								
C620/220 /K62	220	B57620-C221-K62	100					
C620/330 /K62	330	B57620-C331-K62	100					
C620/470 /K62	470	B57620-C471-K62	100					
C620/680 /K62	680	B57620-C681-K62	100					
C620/ 1k/K62	1 k	B57620-C102-K62	100					
C620/ 10k/K62	10 k	B57620-C103-K62	100					
C620/100k/K62	100 k	B57620-C104-K62	100					

Chip thermistor for temperature compensation in hybrid and SMD circuits

Tape packaging in accordance with IEC 286-3, 8-mm blister tape

Temperature range $-55^{\circ}\text{C} \dots +125^{\circ}\text{C}$
 Rated temperature $+25^{\circ}\text{C}$



Termination

TNT0034-Q

Dimensions in mm

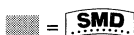
Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	250 +	500 +		

R_R tolerance $\pm 5\%$

▼ C621/ 1 k/5%	1 k	B57621-C102-J62	100					
▼ C621/ 10 k/5%	10 k	B57621-C103-J62	100					
▼ C621/100 k/5%	100 k	B57621-C104-J62	100					
▼ C621/ 2.2k/5%	2.2 k	B57621-C222-J62	100					
▼ C621/ 22 k/5%	22 k	B57621-C223-J62	100					
▼ C621/220 k/5%	220 k	B57621-C224-J62	100					
▼ C621/470 /5%	470	B57621-C471-J62	100					
▼ C621/ 4.7k/5%	4.7 k	B57621-C472-J62	100					
▼ C621/ 47 k/5%	47 k	B57621-C473-J62	100					
▼ C621/474 k/5%	474 k	B57621-C474-J62	100					

R_R tolerance $\pm 10\%$

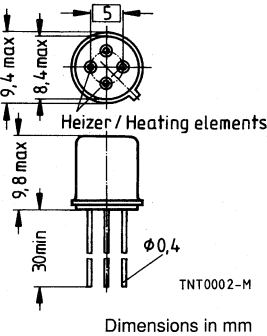
C621/ 1 k/K62	1,0 k	B57621-C102-K62	100					
C621/ 10 k/K62	10,0 k	B57621-C103-K62	100					
C621/100 k/K62	100,0 k	B57621-C104-K62	100					
C621/ 2.2k/K62	2.2 k	B57621-C222-K62	100					
C621/ 22 k/K62	22,0 k	B57621-C223-K62	100					
C621/220 k/K62	220,0 k	B57621-C224-K62	100					
C621/470 /K62	470,0	B57621-C471-K62	100					
C621/ 4.7k/K62	4,7 k	B57621-C472-K62	100					
C621/ 47 k/K62	47,0 k	B57621-C473-K62	100					
C621/470 k/K62	470,0 k	B57621-C474-K62	100					



NTC Thermistors

Indirectly heated thermistor,
e.g. for level control
Metal case, hermetically sealed

Temperature range - 55 °C ... + 125 °C
Rated temperature + 20 °C

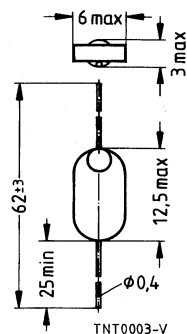


Type	R_H	R_{20}	Ordering code	Min. qty.	Price each				
	Ω	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 20\%$									
F75-34/14u	100	4 k	Q63075-F9	1					
F75-34/14x	400	4 k	Q63075-F1	1					
F75-41/21u	100	10 k	Q63075-F2	1					
F75-41/21x	400	10 k	Q63075-F3	1					
F75-46/23u	100	60 k	Q63075-F4	1					
F75-46/23x	400	60 k	Q63075-F5	1					
F75-54/32u	100	400 k	Q63075-F6	1					
F75-54/32x	400	400 k	Q63075-F7	1					

NTC Thermistors

Thermistor for temperature compensation and measurement at low electrical load

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+20\text{ }^{\circ}\text{C}$



Dimensions in mm

Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 5\%$								
K11/ 50 /5%	50	Q63011-K500-J	5					
K11/100 /5%	100	Q63011-K101-J	5					
K11/200 /5%	200	Q63011-K201-J	5					
K11/500 /5%	500	Q63011-K501-J	5					
K11/ 1k/5%	1 k	Q63011-K102-J	5					
K11/ 2k/5%	2 k	Q63011-K202-J	5					
K11/ 5k/5%	5 k	Q63011-K502-J	5					
K11/ 10k/5%	10 k	Q63011-K103-J	5					
K11/ 20k/5%	20 k	Q63011-K203-J	5					
K11/ 50k/5%	50 k	Q63011-K503-J	5					
K11/100k/5%	100 k	Q63011-K104-J	5					
K11/200k/5%	200 k	Q63011-K204-J	5					

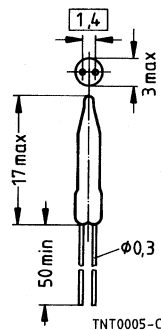
NTC Thermistors

Temperature sensor for measuring and control applications

Glass case, hermetically sealed

Temperature range $-55\text{ }^{\circ}\text{C} \dots +250\text{ }^{\circ}\text{C}$

Rated temperature $+20\text{ }^{\circ}\text{C}$



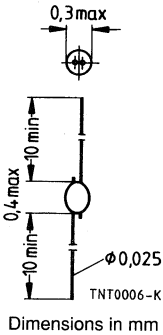
Dimensions in mm

Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 10\%$								
K17/ 2,5k/10%	2,5 k	Q63017-K252-K	1					
K17/ 4 k/10%	4,0 k	Q63017-K402-K	1					
K17/ 10 k/10%	10 k	Q63017-K103-K	1					
K17/100 k/10%	100 k	Q63017-K104-K	1					

NTC Thermistors

Miniature thermistor with low time constant

Temperature range − 55 °C ... + 200 °C
Rated temperature + 20 °C

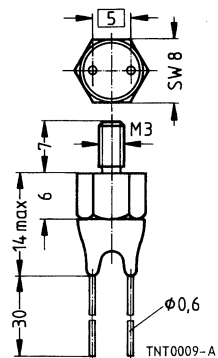


Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	10 +	20 +	50 +	100 +
R_R tolerance $\pm 20\%$								
K19/12k/20%	12 k	Q63019-K123-M	1					
R_R tolerance $\pm 10\%$								
K19/12k/10%	12 k	Q63019-K123-K	1					

NTC Thermistors

Thermistor for temperature compensation and measurement in chassis assemblies

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



Dimensions in mm

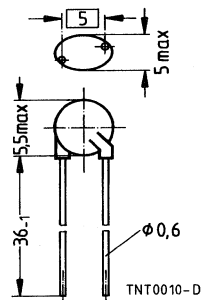
Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	100 +	250 +		
R_R tolerance $\pm 10\%$								
K45/100 /10%	100	Q63045-K101-K	50					
K45/470 /10%	470	Q63045-K471-K	50					
K45/ 1 k/10%	1 k	Q63045-K102-K	50					
K45/ 2,2k/10%	2,2 k	Q63045-K222-K	50					
K45/ 4,7k/10%	4,7 k	Q63045-K472-K	50					
K45/ 6,8k/10%	6,8 k	Q63045-K682-K	50					
K45/ 10 k/10%	10 k	Q63045-K103-K	50					
K45/ 47 k/10%	47 k	Q63045-K473-K	50					
K45/ 68 k/10%	68 k	Q63045-K683-K	50					
K45/150 k/10%	150 k	Q63045-K154-K	50					

NTC Thermistors

Thermistor for temperature compensation and measurement, e.g. in transistor circuits

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$

Rated temperature $+25\text{ }^{\circ}\text{C}$



Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	250 +	500 +		
R_R tolerance $\pm 5\%$								
K164/ 4,7 /5%	4,7	Q63016-K4004-J7	100					
K164/ 6,8 /5%	6,8	Q63016-K4006-J8	100					
K164/ 10 /5%	10	Q63016-K4010-J	100					
K164/ 15 /5%	15	Q63016-K4015-J	100					
K164/ 22 /5%	22	Q63016-K4022-J	100					
K164/ 33 /5%	33	Q63016-K4033-J	100					
K164/ 47 /5%	47	Q63016-K4047-J	100					
K164/ 68 /5%	68	Q63016-K4068-J	100					
K164/100 /5%	100	Q63016-K4100-J	100					
K164/150 /5%	150	Q63016-K4150-J	100					
K164/220 /5%	220	Q63016-K4220-J	100					
K164/330 /5%	330	Q63016-K4330-J	100					
K164/470 /5%	470	Q63016-K4470-J	100					
K164/680 /5%	680	Q63016-K4680-J	100					
K164/ 1 k/5%	1 k	Q63016-K4001-J40	100					
K164/ 1,5k/5%	1,5 k	Q63016-K4001-J45	100					
K164/ 2,2k/5%	2,2 k	Q63016-K4002-J42	100					
K164/ 3,3k/5%	3,3 k	Q63016-K4003-J43	100					
K164/ 4,7k/5%	4,7 k	Q63016-K4004-J47	100					
K164/ 6,8k/5%	6,8 k	Q63016-K4006-J48	100					
K164/ 10 k/5%	10 k	Q63016-K4010-J40	100					
K164/ 15 k/5%	15 k	Q63016-K4015-J40	100					
K164/ 22 k/5%	22 k	Q63016-K4022-J40	100					
K164/ 33 k/5%	33 k	Q63016-K4033-J40	100					
K164/ 47 k/5%	47 k	Q63016-K4047-J40	100					
K164/ 68 k/5%	68 k	Q63016-K4068-J40	100					
K164/100 k/5%	100 k	Q63016-K4100-J40	100					
K164/150 k/5%	150 k	Q63016-K4150-J40	100					
K164/220 k/5%	220 k	Q63016-K4220-J40	100					
K164/330 k/5%	330 k	Q63016-K4330-J40	100					
K164/470 k/5%	470 k	Q63016-K4470-J40	100					

cont'd on page 130

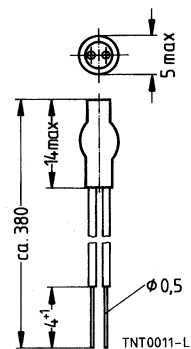
NTC Thermistors

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	250 +	500 +		
R_R tolerance $\pm 10\%$								
K164/ 4,7 /10%	4,7	Q63016-K4004-K7	100					
K164/ 6,8 /10%	6,8	Q63016-K4006-K8	100					
K164/ 10 /10%	10	Q63016-K4010-K	100					
K164/ 15 /10%	15	Q63016-K4015-K	100					
K164/ 22 /10%	22	Q63016-K4022-K	100					
K164/ 33 /10%	33	Q63016-K4033-K	100					
K164/ 47 /10%	47	Q63016-K4047-K	100					
K164/ 68 /10%	68	Q63016-K4068-K	100					
K164/100 /10%	100	Q63016-K4100-K	100					
K164/150 /10%	150	Q63016-K4150-K	100					
K164/220 /10%	220	Q63016-K4220-K	100					
K164/330 /10%	330	Q63016-K4330-K	100					
K164/470 /10%	470	Q63016-K4470-K	100					
K164/680 /10%	680	Q63016-K4680-K	100					
K164/ 1 k/10%	1 k	Q63016-K4001-K40	100					
K164/ 1,5k/10%	1,5 k	Q63016-K4001-K45	100					
K164/ 2,2k/10%	2,2 k	Q63016-K4002-K42	100					
K164/ 3,3k/10%	3,3 k	Q63016-K4003-K43	100					
K164/ 4,7k/10%	4,7 k	Q63016-K4004-K47	100					
K164/ 6,8k/10%	6,8 k	Q63016-K4006-K48	100					
K164/ 10 k/10%	10 k	Q63016-K4010-K40	100					
K164/ 15 k/10%	15 k	Q63016-K4015-K40	100					
K164/ 22 k/10%	22 k	Q63016-K4022-K40	100					
K164/ 33 k/10%	33 k	Q63016-K4033-K40	100					
K164/ 47 k/10%	47 k	Q63016-K4047-K40	100					
K164/ 68 k/10%	68 k	Q63016-K4068-K40	100					
K164/100 k/10%	100 k	Q63016-K4100-K40	100					
K164/150 k/10%	150 k	Q63016-K4150-K40	100					
K164/220 k/10%	220 k	Q63016-K4220-K40	100					
K164/330 k/10%	330 k	Q63016-K4330-K40	100					
K164/470 k/10%	470 k	Q63016-K4470-K40	100					

NTC Thermistors

Temperature sensor for monitoring motor and engine temperatures

Temperature range — 55 °C ... + 150 °C
 Rated temperature + 100 °C



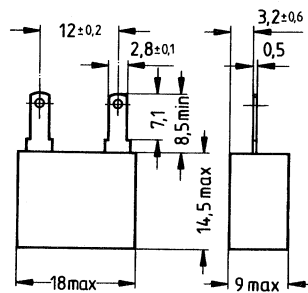
Dimensions in mm

Type	R_{100}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 10\%$								
K227/S1/1,8k	1,8 k	Q63022-K7182-S1	5					

NTC Thermistors

Temperature sensor for monitoring and control applications, e.g. in deep freezers

Temperature range $-55\text{ }^{\circ}\text{C} \dots +100\text{ }^{\circ}\text{C}$
 Rated temperature $-30\text{ }^{\circ}\text{C}$



TNT0013-3

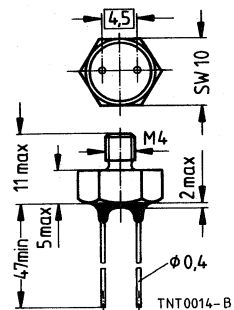
Dimensions in mm

Type	R_{-30}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 3,5\%$								
K243/S2/9,4k	9,4 k	Q63024-K3942-S2	10					

NTC Thermistors

Temperature sensor for measuring and control applications

Temperature range − 55 °C ... + 125 °C
 Rated temperature + 20 °C



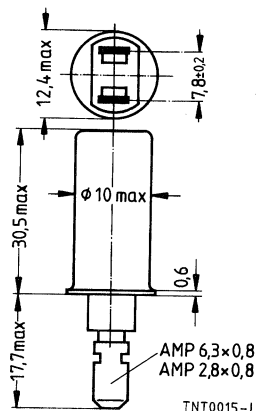
Dimensions in mm

Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 2\%$								
K252/ 6k/ 2%	6 k	Q63025-K2602-G	5					
K252/ 40k/ 2%	40 k	Q63025-K2403-G	5					
R_R tolerance $\pm 10\%$								
K252/500 /10%	500	Q63025-K2501-K	10					
K252/ 1k/10%	1 k	Q63025-K2013-K	10					
K252/ 6k/10%	6 k	Q63025-K2063-K	10					
K252/ 40k/10%	40 k	Q63025-K2044-K	10					

NTC Thermistors

Temperature sensor for measuring and control applications, e.g. in washing machines

Temperature range — 10 °C ... + 100 °C
 Rated temperature + 100 °C
 Measuring accuracy
 in the range
 + 25 °C ... + 100 °C < ± 1,5 K



Dimensions in mm

Type	R_{100}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 3,5\%$								
K276/S2/330/2,8 ¹⁾	330	Q63027-K6331-S228	10					
K276/S2/330/6,3 ²⁾	330	Q63027-K6331-S263	10					
K276/S2/950/2,8 ¹⁾	950	Q63027-K6951-S228	10					

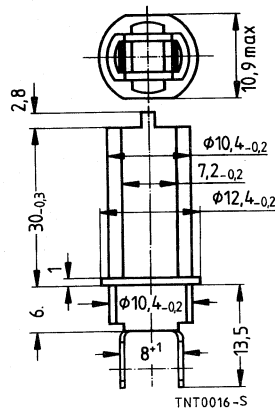
Type	R_{80}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 2\%$								
K276/12k/A3/2,8')	350	B57276-K123-A3	10					

¹⁾ Tab connector AMP 2,8 × 0,8
²⁾ Tab connector AMP 6,3 × 0,8

NTC Thermistors

Temperature sensor for
refrigerators and freezers

Temperature range	- 40 °C ... + 125 °C
Rated temperature	+ 5 °C
Measuring accuracy in the range	< ± 1 K
- 30 °C ... + 10 °C	
Connector as per DIN 46244, shape A	2,8 × 0,8



Dimensions in mm

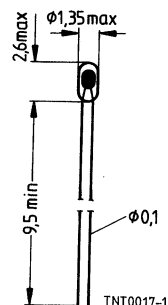
Type	R_5	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 3,5\%$								
K277/S1/2k	2 k	Q63027-K7202-S1	10					

NTC Thermistors

**Miniature temperature sensor for
measuring and control applications**
Glass case, hermetically sealed

Temperature range $-55\text{ }^{\circ}\text{C} \dots +300\text{ }^{\circ}\text{C}$

Rated temperature $+25\text{ }^{\circ}\text{C}$



Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 20\%$								
K295/ 1k/20%	1 k	B57295-K102-M	5					
K295/ 5k/20%	5 k	B57295-K502-M	5					
K295/ 10k/20%	10 k	B57295-K103-M	5					
K295/ 15k/20%	15 k	B57295-K153-M	5					
K295/ 50k/20%	50 k	B57295-K503-M	5					
K295/100k/20%	100 k	B57295-K104-M	5					
K295/500k/20%	500 k	B57295-K504-M	5					
K295/ 1M/20%	1 M	B57295-K105-M	5					
K295/ 30M/20%	30 M	B57295-K306-M	5					

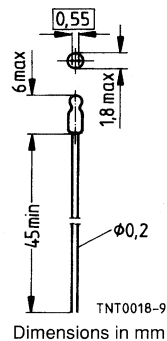
NTC Thermistors

Miniature sensor for measuring and control applications

Glass case, hermetically sealed

Temperature range $-55\text{ }^{\circ}\text{C} \dots +200\text{ }^{\circ}\text{C}$

Rated temperature $+25\text{ }^{\circ}\text{C}$



Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 10\%$								
M85/ 4,7 k/10%	4,7 k	B57085-M472-K	5					
M85/ 10 k/10%	10 k	B57085-M103-K	5					
M85/ 47 k/10%	47 k	B57085-M473-K	5					
M85/100 k/10%	100 k	B57085-M104-K	5					

NTC Thermistors

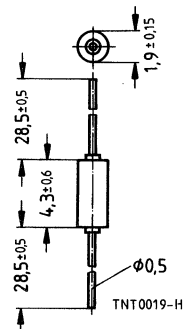
Temperature sensor for measuring and control applications

Glass case, hermetically sealed

Tape packaging in acc. with IEC 286-1

Temperature range $-55^{\circ}\text{C} \dots +300^{\circ}\text{C}$

Rated temperature $+25^{\circ}\text{C}$



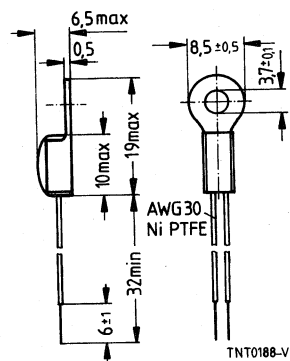
Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	25 +	50 +	100 +	250 +
R_R tolerance $\pm 10\%$								
M87/ 5k/10%	5 k	B57087-M502-K100	10					
M87/ 10k/10%	10 k	B57087-M103-K100	10					
M87/100k/10%	100 k	B57087-M104-K100	10					
M87/200k/10%	200 k	B57087-M204-K100	10					
M87/500k/10%	500 k	B57087-M504-K100	10					

NTC Thermistors

Thermistor for temperature compensation and measurement in chassis assemblies

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



Dimensions in mm

Type	R_{25} Ω	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +

R_R tolerance $\pm 2\%$

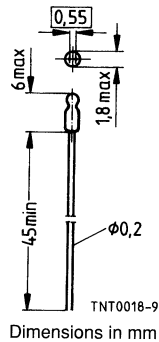
▼ M703/10k/G	10 k	B57703-M103-G	25					
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NTC Thermistors

Miniature temperature sensor for measuring and control applications

Glass case, hermetically sealed

Temperature range − 55 °C ... + 350 °C
 Rated temperature + 20 °C

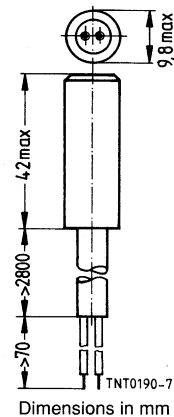


Type	R_{20}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 20\%$								
M812/100 k/20%	100 k	Q63081-M2104-M	1					
R_R tolerance $\pm 10\%$								
M812/100 k/10%	100 k	Q63081-M2104-K	1					

NTC Thermistors

Thermistor for temperature measurement in air and liquids
Metal case

Temperature range - 10 °C ... + 105 °C
Rated temperature + 50 °C

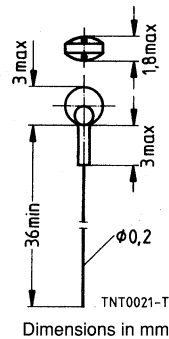


Type	R_{50}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 3\%$								
▼ M831/870/A3	359	B57831-M871-A3	5					

NTC Thermistors

Thermistor for high-precision temperature measurement

Temperature range − 40 °C ... + 100 °C
Rated temperature + 25 °C

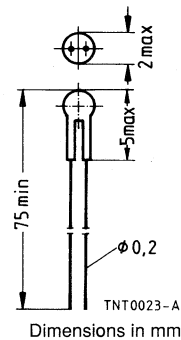


Type	R25	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
R _R tolerance ± 0,4 %								
M841/S1/3 k	3 k	Q63084-M1302-S1	5					
M841/S1/5 k	5 k	Q63084-M1502-S1	5					

NTC Thermistors

Miniature thermistor for high-precision
temperature measurement in
measuring and control engineering

Temperature range - 40 °C ... + 100 °C
Rated temperature + 25 °C

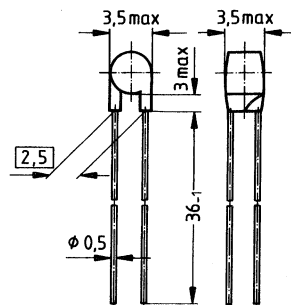


Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	
R_R tolerance $\pm 1\%$ (measuring error $\pm 0,5\text{ K}$)								
M867/10 k/1%	10 k	Q63086-M7103-F	5					
M867/60 k/S1	60 k	Q63086-M7603-S1	5					

NTC Thermistors

Temperature sensor for measuring and control applications

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



TNT0024-I

Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	250 +	500 +		

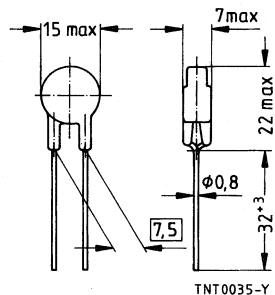
R_R tolerance $\pm 10\%$

M891/ 1 k/10%	1,0 k	Q63089-M1102-K	100					
M891/ 1,5k/10%	1,5 k	Q63089-M1152-K	100					
M891/ 2,2k/10%	2,2 k	Q63089-M1222-K	100					
M891/ 3,3k/10%	3,3 k	Q63089-M1332-K	100					
M891/ 4,7k/10%	4,7 k	Q63089-M1472-K	100					
M891/ 6,8k/10%	6,8 k	Q63089-M1682-K	100					
M891/ 10 k/10%	10 k	Q63089-M1103-K	100					
M891/ 15 k/10%	15 k	Q63089-M1153-K	100					
M891/ 22 k/10%	22 k	Q63089-M1223-K	100					
M891/ 33 k/10%	33 k	Q63089-M1333-K	100					
M891/ 47 k/10%	47 k	Q63089-M1473-K	100					
M891/ 68 k/10%	68 k	Q63089-M1683-K	100					
M891/100 k/10%	100 k	Q63089-M1104-K	100					
M891/150 k/10%	150 k	Q63089-M1154-K	100					
M891/220 k/10%	220 k	Q63089-M1224-K	100					
M891/330 k/10%	330 k	Q63089-M1334-K	100					
M891/470 k/10%	470 k	Q63089-M1474-K	100					
M891/680 k/10%	680 k	Q63089-M1684-K	100					
M891/ 1 M/10%	1,0 M	Q63089-M1105-K	100					

NTC Thermistors

Thermistor for inrush current limiting

Temperature range $-25\text{ }^{\circ}\text{C} \dots +170\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



TNT0035-Y

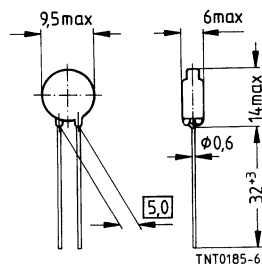
Dimensions in mm

Type	R_{25}	$I_{25 \text{ max.}}$	Ordering code	Min. qty.	Price each				
	Ω	A			Min. qty. +	50 +	100 +	250 +	
R_R tolerance $\pm 20 \%$									
S234/ 1,0/20%	1,0	11,5	B57234-S109-M	25					
S234/ 2,2/20%	2,2	9,0	B57234-S229-M	25					
S234/ 2,5/20%	2,5	8,4	B57234-S259-M	25					
S234/ 4,7/20%	4,7	6,6	B57234-S479-M	25					
S234/ 5,0/20%	5,0	6,4	B57234-S509-M	25					
S234/ 7,0/20%	7,0	6,0	B57234-S709-M	25					
S234/ 10,0/20%	10,0	5,0	B57234-S100-M	25					
S234/ 15,0/20%	15,0	4,0	B57234-S150-M	25					
S234/ 22,0/20%	22,0	4,0	B57234-S220-M	25					
S234/ 33,0/20%	33,0	3,3	B57234-S330-M	25					
S234/ 40,0/20%	40,0	3,4	B57234-S400-M	25					
S234/ 60,0/20%	60,0	4,0	B57234-S600-M	25					
S234/220,0/20%	220,0	2,0	B57234-S221-M	25					

NTC Thermistors

Thermistor for inrush current limiting

Temperature range $-55\text{ }^{\circ}\text{C} \dots +170\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



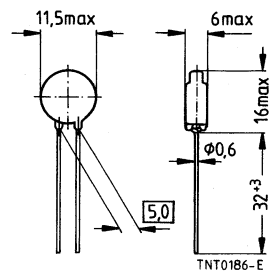
Dimensions in mm

Type	R_{25}	$I_{25\text{ max.}}$	Ordering code	Min. qty.	Price each				
	Ω	A			Min. qty. +	50 +	100 +	250 +	
R_R tolerance $\pm 20\%$									
S235/ 5/M	5	4,2	B57235-S509-M	25					
S235/ 6/M	6	4,0	B57235-S609-M	25					
S235/ 8/M	8	3,5	B57235-S809-M	25					
S235/10/M	10	3,0	B57235-S100-M	25					

NTC Thermistors

Thermistor for inrush current limiting

Temperature range $-55\text{ }^{\circ}\text{C} \dots +170\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$



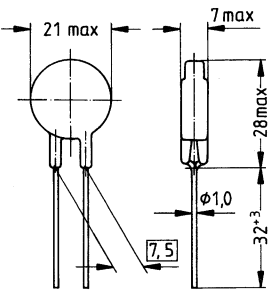
Dimensions in mm

Type	R_{25}	$I_{25 \text{ max.}}$	Ordering code	Min. qty.	Price each				
	Ω	A			Min. qty. +	50 +	100 +	250 +	
R_R tolerance $\pm 20\%$									
▼ S236/ 2,5/M	2,5	5,5	B57236-S259-M	25					
▼ S236/ 5 /M	5	4,5	B57236-S509-M	25					
▼ S236/10 /M	10	3,5	B57236-S100-M	25					
▼ S236/12 /M	12	3,2	B57236-S120-M	25					
▼ S236/16 /M	16	3,5	B57236-S160-M	25					

NTC Thermistors

Thermistor for inrush current limiting

Temperature range - 25 °C ... + 170 °C
Rated temperature + 25 °C



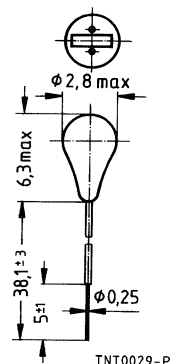
TNT0036-7
Dimensions in mm

Type	R_{25}	$I_{25 \text{ max.}}$	Ordering code	Min. qty.	Price each				
	Ω	A			Min. qty. +	20 +	50 +	100 +	250 +
R_R tolerance $\pm 20 \%$									
S364/ 1,0/20%	1,0	16,0	B57364-S109-M	10					
S364/ 2,0/20%	2,0	12,0	B57364-S209-M	10					
S364/ 2,5/20%	2,5	11,0	B57364-S259-M	10					
S364/ 4,0/20%	4,0	9,5	B57364-S409-M	10					
S364/ 5,0/20%	5,0	8,5	B57364-S509-M	10					
S364/ 10,0/20%	10,0	7,5	B57364-S100-M	10					
S364/120,0/20%	120,0	3,5	B57364-S121-M	10					

NTC Thermistors

Miniature thermistor for accurate temperature measurement

Temperature range $-55\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$
 Measuring accuracy
 in the range $0 \dots +70\text{ }^{\circ}\text{C}$ $\pm 0,2\text{ K}$



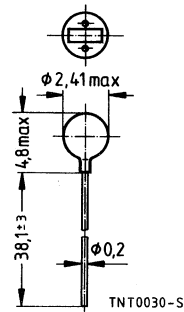
Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
▼ S863/ 1 k	1 k	B57863-S102-F9	10					
▼ S863/ 5 k	5 k	B57863-S502-F9	10					
▼ S863/ 10 k	10 k	B57863-S103-F9	10					
▼ S863/ 50 k	50 k	B57863-S503-F9	10					
▼ S863/100 k	100 k	B57863-S104-F9	10					

NTC Thermistors

Miniature thermistor for accurate temperature measurement

Temperature range $-50\text{ }^{\circ}\text{C} \dots +125\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$
 Measuring accuracy
 in the range $0 \dots +70\text{ }^{\circ}\text{C}$ $\pm 0,2\text{ K}$



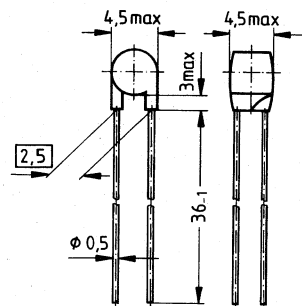
Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each				
	Ω			Min. qty. +	20 +	50 +	100 +	250 +
▼ S869/ 1 k	1 k	B57869-S102-F9	10					
▼ S869/ 3 k	3 k	B57869-S302-F9	10					
▼ S869/ 5 k	5 k	B57869-S502-F9	10					
▼ S869/ 10 k	10 k	B57869-S103-F9	10					
▼ S869/ 30 k	30 k	B57869-S303-F9	10					
▼ S869/ 50 k	50 k	B57869-S503-F9	10					
▼ S869/100 k	100 k	B57869-S104-F9	10					

NTC Thermistors

Temperature sensor for measuring and control applications

Temperature range $-55\text{ }^{\circ}\text{C} \dots +155\text{ }^{\circ}\text{C}$
 Rated temperature $+25\text{ }^{\circ}\text{C}$
 Absolute measuring accuracy $\pm 1\text{ K (0} \dots 70\text{ }^{\circ}\text{C)}$



TNT0191 - F

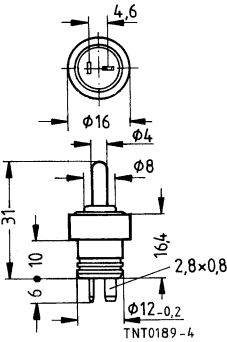
Dimensions in mm

Type	R_{25}	Ordering code	Min. qty.	Price each			
	Ω			Min. qty. +	50 +	100 +	250 +
▼ S891/ 2,2k/H9	2,2 k	B57891-S222-H9	10				
▼ S891/ 10 k/H9	10 k	B57891-S103-H9	10				
▼ S891/ 20 k/H9	20 k	B57891-S203-H9	10				
▼ S891/100 k/H9	100 k	B57891-S104-H9	10				

NTC Thermistors

Temperature sensor for measuring and control purposes, applicable in liquids and gases; e.g. for temperature measurement in flow-type heaters
Metal case, hermetically sealed

Temperature range - 25 °C ... + 100 °C
Rated temperature + 25 °C
Response time < 5 s



Dimensions in mm

Type	R25	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	20 +	50 +	100 +
RR tolerance ± 2 %								
Z10/10k/G	10 k	B57010-Z103-G	2					

PTC Thermistors

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▼ Newly included in this edition

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PTC thermistors		
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Further technical literature

Data Book "PTC Thermistors", B4-B3653-X-X-7600
Short Form Catalog "PTC Thermistors", B4-B3445-X-X-7600
Data Sheet Collection "Surface-Mount Thermistors", B5-P2511-X-X-7600
Product Survey "Thermistors", B5-P2520-X-X-7400

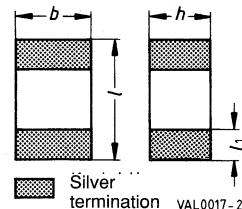
Symbols and terms

e	Lead spacing
I_K	Trip current
I_{Smax}	Max. perm. switching current
R_{PTC}	PTC resistance
R_R	Rated resistance
ΔR_R	Tolerance of R_R
T_A	Ambient temperature
T_{ref}	Reference temperature
T_{NAT}	Nominal threshold temperature
t_s	Switching time
V_{PTC}	PTC voltage
V_{max}	Max. operating voltage
V_{meas}	Measuring voltage

Chip thermistor

Dimensions in mm

Type	l	b	s	l_1
A1701	$2,0 \pm 0,3$	$1,25 \pm 0,2$	$0,85 \pm 0,2$	$0,35 \pm 0,15$
A1707	$3,2 \pm 0,4$	$2,50 \pm 0,3$	$1,7 \pm 0,2$	$0,5 \pm 0,25$
A1708	$4,5 \pm 0,5$	$3,20 \pm 0,4$	$1,7 \pm 0,2$	$0,5 \pm 0,25$
A1709	$5,7 \pm 0,5$	$4,80 \pm 0,5$	$1,7 \pm 0,2$	$0,5 \pm 0,25$



For measuring and control applications

Tape packaging in acc. with IEC 286-3, 8-mm blister tape

Type	T_{NAT}	$R_{PTC} (V_{PTC} \leq 2,5 V)$		Ordering code	Min. qty.	Price each				
	$^{\circ}C$	$T_{NAT} - 5K$ k Ω	$T_{NAT} + 5K$ k Ω			Min. qty. +	50 +	100 +	500 +	1000 +

$V_{max} (40^{\circ}C) = 25 V, R_R = 1 k\Omega$

▼ A1701	110	$\leq 5,5$	$\geq 13,3$	B59701-A1110-A62	25					
▼ A1701	120	$\leq 5,5$	$\geq 13,3$	B59701-A1120-A62	25					
▼ A1701	130	$\leq 5,5$	$\geq 13,3$	B59701-A1130-A62	25					

For overload protection

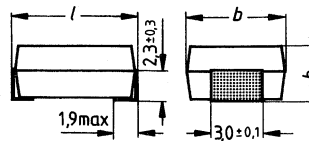
Type	I_K	I_{Smax}	Ordering code	Min. qty.	Price each				
	mA	mA			Min. qty. +	50 +	100 +	500 +	1000 +

$V_{max} (60^{\circ}C) = 80 V, R_R = 125 \Omega, \Delta R_R = \pm 25 \%$

▼ A1707	> 65	300	B59707-A1120-A62	25					
▼ A1708	> 65	400	B59708-A1120-A62	25					
▼ A1709	> 65	600	B59709-A1120-A62	25					

Chip thermistor for overload protection

Molded encapsulation,
terminations solderable

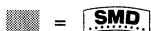


Termination
TPT 0352-D

Dimensions in mm

Type	h	b	l
P1101	3,2 ± 0,3	6,3 ± 0,3	8,0 ± 0,3
P1115	3,2 ± 0,3		
P1135	4,5 ± 0,3		
P1201	3,2 ± 0,3		
P1215	3,2 ± 0,3		
P1235	4,5 ± 0,3		
P1301	3,2 ± 0,3	8,0 ± 0,3	10,0 ± 0,3
P1315	3,2 ± 0,3		
P1335	4,5 ± 0,3		

Type	I_K	I_{Smax}	Ordering code	Min. qty.	Price each				
	mA	mA			Min. qty. +	100 +	250 +	500 +	
$V_{max} (60\text{ }^{\circ}\text{C}) = 30\text{ V}, T_{ref} = 130\text{ }^{\circ}\text{C}$									
P 1101	260	700	B59101-P1120-A40	50					
P 1201	400	1000	B59201-P1120-A40	50					
P 1301	470	1600	B59301-P1120-A40	50					
$V_{max} (60\text{ }^{\circ}\text{C}) = 80\text{ V}, T_{ref} = 120\text{ }^{\circ}\text{C}$									
P 1115	105	700	B59115-P1120-A40	50					
P 1215	155	1000	B59215-P1120-A40	50					
P 1315	225	1600	B59315-P1120-A40	50					
$V_{max} (60\text{ }^{\circ}\text{C}) = 265\text{ V}, T_{ref} = 120\text{ }^{\circ}\text{C}$									
P 1135	60	200	B59135-P1120-A40	50					
P 1235	90	400	B59235-P1120-A40	50					
P 1335	120	600	B59335-P1120-A40	50					



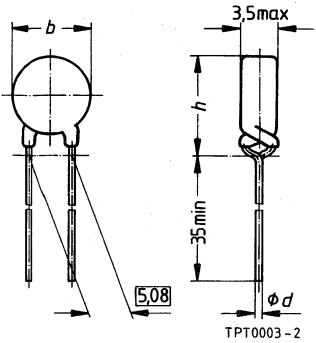
PTC Thermistors

Thermistor for overload protection

Coated

Dimensions in mm

Type	$b_{\max}$	$\varnothing d_{\max}$	$h_{\max}$
C915	26	0,8	29,5
C935	22	0,6	25,5
C945	17,5	0,6	21,0
C955	13,5	0,6	17,0
C965	11,0	0,6	14,5
C975	9,0	0,6	12,5
C985	6,5	0,6	10,0
C995	4,0	0,5	7,5



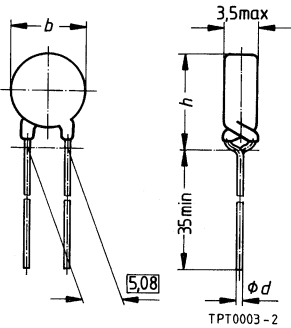
$V_{\max}$ ($T_A = 60\text{ }^{\circ}\text{C}$)	R_R	I_K	$I_{S\max}$	Ordering code	Min. qty.	Price each				
						Min. qty. +	50 +	100 +	250 +	500 +
V	Ω	mA	A							
20	0,2	4180	15	Q63100-P2430-C915	10					
20	0,3	3030	10	Q63100-P2430-C935	10					
20	0,45	2230	8	Q63100-P2430-C945	10					
20	0,8	1400	5,5	Q63100-P2430-C955	10					
20	1,2	1060	4,3	Q63100-P2430-C965	10					
20	1,8	805	3	Q63100-P2430-C975	20					
20	4,6	425	1	Q63100-P2430-C985	20					
20	13	215	0,7	Q63100-P2430-C995	20					
30	0,2	3630	15	Q63100-P2390-C915	10					
30	0,3	2630	10	Q63100-P2390-C935	10					
30	0,45	1940	8	Q63100-P2390-C945	10					
30	0,8	1220	5,5	Q63100-P2390-C955	10					
30	1,2	925	4,3	Q63100-P2390-C965	10					
30	1,8	700	3	Q63100-P2390-C975	20					
30	4,6	370	1	Q63100-P2390-C985	20					
30	13	185	0,7	Q63100-P2390-C995	20					

Thermistor for overload protection

Coated

Dimensions in mm

Type	b_{max}	$\varnothing d_{max}$	h_{max}
C910	26	0,8	29,5
C930	22	0,6	25,5
C940	17,5	0,6	21,0
C950	13,5	0,6	17,0
C960	11,0	0,6	14,5
C970	9,0	0,6	12,5
C980	6,5	0,6	10,0
C990	4,0	0,5	7,5



V_{max} ($T_A = 60\text{ }^{\circ}\text{C}$)	R_R	I_K	I_{Smax}	Ordering code	Min. qty.	Price each				
	Ω	mA	A			Min. qty. +	50 +	100 +	250 +	500 +
80	0,9	810	15	Q63100-P2350-C910	10					
80	1,65	515	10	Q63100-P2350-C930	10					
80	2,3	370	8	Q63100-P2350-C940	10					
80	3,7	260	5,5	Q63100-P2350-C950	10					
80	5,6	195	4,3	Q63100-P2350-C960	10					
80	9,4	140	3	Q63100-P2350-C970	20					
80	25	75	1	Q63100-P2350-C980	20					
80	55	45	0,7	Q63100-P2350-C990	20					
80	0,9	1500	15	Q63100-P2390-C910	10					
80	1,65	1000	10	Q63100-P2390-C930	10					
80	2,3	725	8	Q63100-P2390-C940	10					
80	3,7	460	5,5	Q63100-P2390-C950	10					
80	5,6	355	4,3	Q63100-P2390-C960	10					
80	9,4	225	3	Q63100-P2390-C970	20					
80	25	125	1	Q63100-P2390-C980	20					
80	55	75	0,7	Q63100-P2390-C990	20					

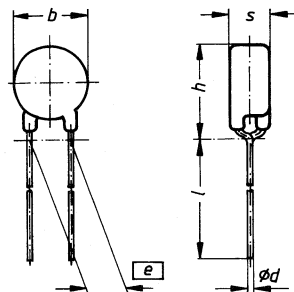
PTC Thermistors

Thermistor for overload protection

Coated

Dimensions in mm

Type	e	$b_{\max}$	$s_{\max}$	$h_{\max}$	$l_{\min}$	$\varnothing d_{\max}$
C810	5,08	26,0	5,5	29,5	35,0	0,8
C830	5,08	22,0	5,5	25,5	35,0	0,6
C840	5,08	17,5	5,5	21,0	35,0	0,6
C850	5,08	13,5	5,5	17,0	35,0	0,6
C860	5,08	11,0	5,5	14,5	35,0	0,6
C87★	5,08	9,0	5,5	12,5	35,0	0,6
C880 ... 6	5,08	6,5	5,5	10,0	35,0	0,6
C890	5,08	4,0	5,5	7,5	35,0	0,5



VAR0008-S

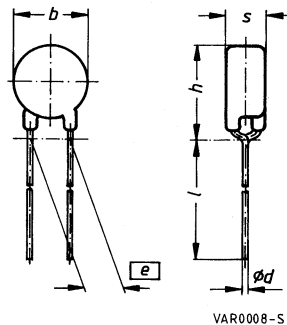
$V_{\max}$ ($T_A = 60^\circ\text{C}$)	R_R	I_K	$I_{S\max}$	Ordering code	Min. qty.	Price each				
						Min. qty. +	50 +	100 +	250 +	500 +
V	Ω	mA	A							
160	2,6	1170	10	Q63100-P2430-C810	10					
160	3,7	770	7	Q63100-P2430-C830	10					
160	6	600	4,1	Q63100-P2430-C840	10					
160	10	365	2,2	Q63100-P2430-C850	10					
160	15	265	1,5	Q63100-P2430-C860	10					
160	25	185	1	Q63100-P2430-C870	10					
160	70	100	0,4	Q63100-P2430-C880	20					
160	150	53	0,2	Q63100-P2430-C890	20					
265	2,6	530	10	Q63100-P2350-C810	10					
265	3,7	380	7	Q63100-P2350-C830	10					
265	6	260	4,1	Q63100-P2350-C840	10					
265	10	170	2,2	Q63100-P2350-C850	10					
265	15	135	1,5	Q63100-P2350-C860	10					
265	25	95	1	Q63100-P2350-C870	10					
265	70	50	0,4	Q63100-P2350-C880	20					
265	150	27	0,2	Q63100-P2350-C890	20					
265	2,6	945	10	Q63100-P2390-C810	10					
265	3,7	665	7	Q63100-P2390-C830	10					
265	6	485	4,1	Q63100-P2390-C840	10					
265	10	300	2,2	Q63100-P2390-C850	10					
265	15	205	1,5	Q63100-P2390-C860	10					
265	25	150	1	Q63100-P2390-C870	10					
265	35	115	1	Q63100-P2390-C872	10					
265	45	100	1	Q63100-P2390-C873	10					
265	55	90	1	Q63100-P2390-C874	10					
265	65	80	1	Q63100-P2390-C875	10					
265	70	75	0,4	Q63100-P2390-C880	20					
265	120	50	0,4	Q63100-P2390-C883	20					
265	150	43	0,2	Q63100-P2390-C890	20					
420	600	30	0,2	Q63100-P2390-C884	20					
550	1200	22	0,1	Q63100-P2390-C885	20					
550	1500	18	0,1	Q63100-P2390-C886	20					

Thermistor for overload protection

Coated

Dimensions in mm

Type	e	b_{max}	s_{max}	h_{max}	l_{min}	$\varnothing d_{max}$
C811	5,08	26,0	5,5	29,5	35,0	0,8
C831	5,08	22,0	5,5	25,5	35,0	0,6
C841	5,08	17,5	5,5	21,0	35,0	0,6
C851	5,08	13,5	5,5	17,0	35,0	0,6
C861	5,08	11,0	5,5	14,5	35,0	0,6
C871	5,08	9,0	5,5	12,5	35,0	0,6
C881	5,08	6,5	5,5	10,0	35,0	0,6
C891	5,08	4,0	5,5	7,5	35,0	0,5



VAR0008-S

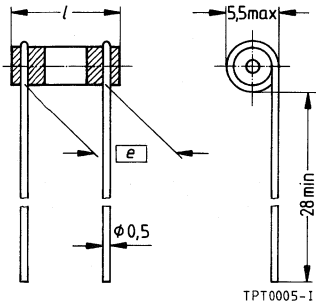
V_{max} ($T_A = 60^\circ C$) V	R_R	I_K	$I_{S_{max}}$	Ordering code	Min. qty.	Price each				
	Ω	mA	A			Min. qty. +	50 +	100 +	250 +	500 +
▼ 265	2,6	1060	10,0	Q63100-P2405-C811	10					
▼ 265	3,7	720	7,0	Q63100-P2405-C831	10					
▼ 265	6,0	540	4,1	Q63100-P2405-C841	10					
▼ 265	10,0	330	2,2	Q63100-P2405-C851	10					
▼ 265	15,0	235	1,5	Q63100-P2405-C861	10					
▼ 265	25,0	167	1,0	Q63100-P2405-C871	20					
▼ 265	70,0	90	0,4	Q63100-P2405-C881	20					
▼ 265	150,0	48	0,2	Q63100-P2405-C891	20					

PTC Thermistors

Thermistor for overload protection

Dimensions in mm

Type	l_{max}	e
-B402	14	10
-B403	12	8
-B404	17	12,5
-B405	17	12,5
-B406	17	12,5



V_{max} ($T_A = 60\text{ }^{\circ}\text{C}$) V	R_R	I_K	I_{Smax}	Ordering code	Min. qty.	Price each				
	Ω	mA	A			Min. qty. +	50 +	100 +	250 +	500 +
250	2000	7	0,3	Q63100-P330-B402	10					
440	1600	8	0,7	Q63100-P5330-B403	10					
550	3500	6	0,4	Q63100-P5330-B404	10					
420	3500	6	0,3	Q63100-P5330-B405	10					
550	6250	4	0,3	Q63100-P5330-B406	10					

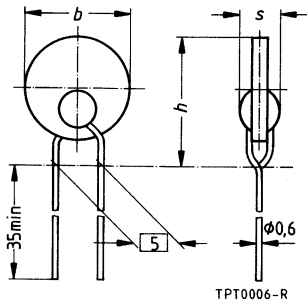
PTC Thermistors

Thermistor for overload protection

Without coating

Dimensions in mm

Type	b max	h max	s max
-B75★	12,5	16,0	7
-B77★	8,5	12,0	7



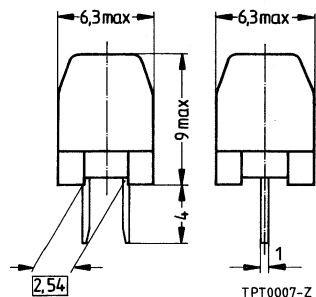
$V_{\max}$ ($T_A = 60\text{ }^{\circ}\text{C}$) V	R_R	I_K	$I_{S\max}$	Ordering code	Min. qty.	Price each				
	Ω	mA	A			Min. qty. +	50 +	100 +	250 +	500 +
420	25	179	2	Q63100-P2390-B750	10					
420	50	126	2	Q63100-P2390-B751	10					
420	80	100	2	Q63100-P2390-B752	10					
420	120	82	2	Q63100-P2390-B753	10					
420	150	73	2	Q63100-P2390-B754	10					
550	500	40	1,4	Q63100-P2390-B755	10					
1000	7500	12	0,5	Q63100-P2390-B758	10					
420	120	71	1,4	Q63100-P2390-B771	10					
420	150	63	1,4	Q63100-P2390-B772	10					
550	500	35	1	Q63100-P2390-B773	10					
550	1100	23,5	1	Q63100-P2390-B774	10					

PTC Thermistors

Thermistor for delayed switching (Type J29 for switch-mode power supplies)

Flame-retardant plastic case

Type	t_s ($I_{S \max}$)
	s
J280	$\leq 0,5$
J281	$\leq 0,5$
J282	$\leq 0,5$
J283	$\leq 0,5$
J284	$\leq 0,5$
J285	$\leq 0,5$
J286	$\leq 0,5$
J287	$\leq 0,5$
J288	$\leq 0,5$
J289	$\leq 0,5$
J290	$\leq 0,5$
J29	$\leq 0,5$
J29	$\leq 1,0$
J29	$\leq 2,0$



Dimensions in mm

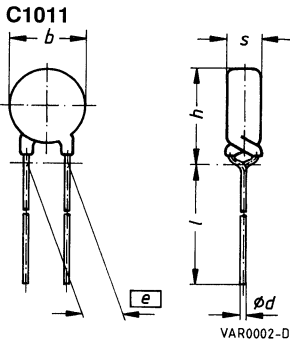
Type	$V_{\max}$ ($T_A = 60^\circ \text{C}$)	R_R	$I_{S \max}$ ($V_{\max}$)	Ordering code	Min. qty.	Price each				
	V	Ω	mA			Min. qty. +	50 +	100 +	500 +	1000 +
J280	80	32	1100	B59339-A1320-P20	25					
J281	80	50	900	B59339-A1500-P20	25					
J282	160	80	700	B59339-A1800-P20	25					
J283	160	120	580	B59339-A1121-P20	25					
J284	265	200	420	B59339-A1201-P20	25					
J285	265	320	330	B59339-A1321-P20	25					
J286	265	500	270	B59339-A1501-P20	25					
J287	265	800	220	B59339-A1801-P20	25					
J288	265	1200	180	B59339-A1122-P20	25					
J289	265	2000	150	B59339-A1202-P20	25					
J290	265	3200	120	B59339-A1322-P20	25					
J29	265	5000	100	B59339-A1502-P20	25					
J29	265	5000	100	B59342-A1502-P20	25					
J29	265	5000	100	B59346-A1502-P20	25					

PTC Thermistors

Temperature sensor
for measuring and control applications
Coated

Dimensions in mm

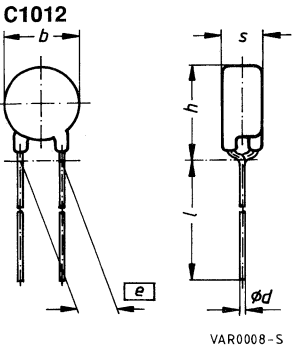
Type	e	b_{max}	s_{max}	h_{max}	l_{min}	$\varnothing d_{max}$
C1011	5,08	4,0	3,5	7,0	35,0	0,5



T_{ref} °C	R_R ($V_{PTC} \leq 1,5 V$)	R_{PTC} ($V_{PTC} \leq 1,5 V$)		Ordering code	Min. qty.	Price each			
	Ω	$T_{ref} - 5 K$	$T_{ref} + 5 K$			Min. qty. +	50 +	100 +	500 +
$V_{max} (40\text{ }^{\circ}C) = 30 V$									
-30	$\geq 100 k$	≤ 2100	≥ 700	B59011-C1930-A70	20				
0	$> 5 k$	≤ 1800	≥ 600	B59011-C1000-A70	20				
40	110	≤ 250	≥ 130	B59011-C1040-A70	20				
60	80	≤ 210	≥ 110	B59011-C1060-A70	20				
80	80	≤ 210	≥ 110	B59011-C1080-A70	20				
120	85	≤ 200	≥ 100	B59011-C1120-A70	20				
160	110	≤ 210	≥ 110	B59011-C1160-A70	20				
180	110	≤ 190	≥ 90	B59011-C1180-A70	20				

PTC Thermistors

Temperature sensor
for measuring and control applications
Coated



Dimensions in mm

Type		b max	s max	h max	l min	Ø d max
C1012		5,08	5,0	8,5	35,0	0,6

T_{ref} °C	R_R ($V_{PTC} \leq 1,5 V$) Ω	R_{PTC} ($V_{PTC} \leq 1,5 V$)		Ordering code	Min. qty.	Price each				
		$T_{ref} - 5 K$ Ω	$T_{ref} + 5 K$ Ω			Min. qty. +	50 +	100 +	500 +	

$V_{max} (40\text{ °C}) = 265 V$

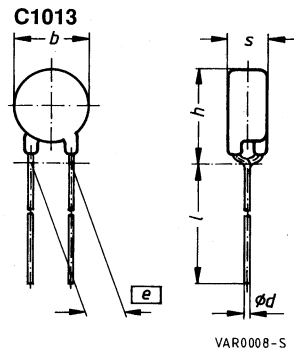
▼ 40	130	≤ 290	≥ 150	B59012-C1040-A70	10					
▼ 60	80	≤ 210	≥ 110	B59012-C1060-A70	10					
▼ 80	80	≤ 210	≥ 110	B59012-C1080-A70	10					
▼ 120	96	≤ 220	≥ 120	B59012-C1120-A70	10					
▼ 160	110	≤ 210 ¹⁾	≥ 110 ¹⁾	B59012-C1160-A70	10					
▼ 180	130	≤ 210 ²⁾	≥ 110 ²⁾	B59012-C1180-A70	10					

1) R_{PTC} ratings at $T_{ref} \pm 6 K$

2) R_{PTC} ratings at $T_{ref} \pm 7 K$

PTC Thermistors

Temperature sensor
for measuring and control applications
Coated



Dimensions in mm

Type	e	b_{max}	s_{max}	h_{max}	l_{min}	$\varnothing d_{max}$
C1013	5,08	9,0	5,0	12,5	35,0	0,6

T_{ref} °C	R_R ($V_{PTC} \leq 1,5\text{ V}$) Ω	R_{PTC} ($V_{PTC} \leq 1,5\text{ V}$)		Ordering code	Min. qty.	Price each			
		$T_{ref} - 5\text{ K}$ Ω	$T_{ref} + 5\text{ K}$ Ω			Min. qty. +	50 +	100 +	500 +

$V_{max}(40\text{ °C}) = 265\text{ V}$

▼ 40	46	≤ 110	≥ 55	B59013-C1040-A70	10				
▼ 60	27	≤ 70	≥ 38	B59013-C1060-A70	10				
▼ 80	27	≤ 70	≥ 38	B59013-C1080-A70	10				
▼ 120	33	≤ 75	≥ 40	B59013-C1120-A70	10				
▼ 160	40	≤ 75 ¹⁾	≥ 40 ¹⁾	B59013-C1160-A70	10				
▼ 180	46	≤ 75 ²⁾	≥ 40 ²⁾	B59013-C1180-A70	10				

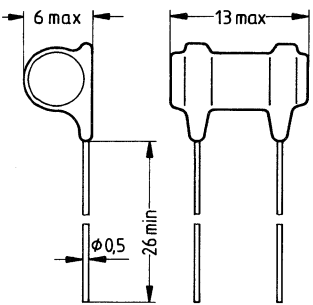
1) R_{PTC} ratings at $T_{ref} \pm 6\text{ K}$

2) R_{PTC} ratings at $T_{ref} \pm 7\text{ K}$

PTC Thermistors

Temperature sensor
for measuring and control applications

Coated



TPT0011-S

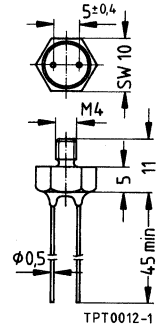
Dimensions in mm

T_{ref} °C	R_R ($V_{PTC} \leq 1,5 V$) Ω	R_{PTC} ($V_{PTC} \leq 1,5 V$)		Ordering code	Min. qty.	Price each				
		$T_{ref} - 7 K$ Ω	$T_{ref} + 7 K$ Ω			Min. qty. +	50 +	100 +	500 +	
$V_{max} (40 ^\circ C) = 250 V$										
60	1100	≤ 4000	≥ 1000	Q63100-P330-C40	10					
80	1100	≤ 4000	≥ 1000	Q63100-P350-C40	10					
120	1100	≤ 4000	≥ 1000	Q63100-P390-C40	10					

PTC Thermistors

Temperature sensor for measuring and control applications

Screw-type case



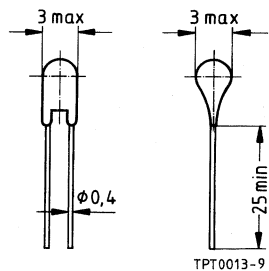
Dimensions in mm

T_{ref}	R_R ($V_{PTC} \leq 1,5 V$)	R_{PTC} ($V_{PTC} \leq 1,5 V$)		Ordering code	Min. qty.	Price each			
		$T_{ref} - 5K$	$T_{ref} + 5K$			Min. qty. +	50 +	100 +	500 +
°C	Ω	Ω	Ω						
V_{max} (40 °C) = 20 V; test voltage terminals/case 3 kV ac									
60	80	≤ 240	≥ 120	Q63100-P330-D1	10				
80	80	≤ 230	≥ 110	Q63100-P350-D1	10				
120	80	≤ 225	≥ 105	Q63100-P390-D1	10				
40	130	≤ 350	≥ 170	Q63100-P310-D401	5				
60	80	≤ 240	≥ 120	Q63100-P330-D401	5				
80	80	≤ 230	≥ 110	Q63100-P350-D401	5				
90	80	≤ 230	≥ 110	Q63100-P360-D401	5				
120	80	≤ 225	≥ 105	Q63100-P390-D401	5				

T_{NAT} °C	R_R ($V_{PTC} \leq 2,5 V$) Ω	R_{PTC} ($V_{PTC} \leq 2,5 V$)		Ordering code	Min. qty.	Price each			
		$T_{NAT} - 5 K$ Ω	$T_{NAT} + 5 K$ Ω			Min. qty. +	50 +	100 +	500 +
V_{max} (40 °C) = 20 V; test voltage terminals/case 3 kV ac									
60	≤ 100	≤ 1,7 k	≥ 1,7 k	Q63100-P331-D201	10				
70	≤ 100	≤ 1,7 k	≥ 1,7 k	Q63100-P341-D201	10				
85	≤ 100	≤ 1,7 k	≥ 1,7 k	Q63100-P356-D201	10				
95	≤ 100	≤ 1,7 k	≥ 1,7 k	Q63100-P366-D201	10				
125	≤ 100	≤ 1,7 k	≥ 1,7 k	Q63100-P396-D201	10				

PTC Thermistors

Temperature sensor
for measuring and control applications
Coated



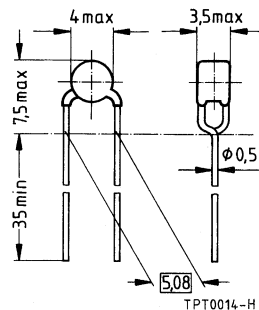
Dimensions in mm

T_{NAT} °C	R_R ($V_{PTC} \leq 2,5 V$) Ω	R_{PTC} ($V_{PTC} \leq 2,5 V$)		Ordering code	Min. qty.	Price each				
		$T_{NAT} - 5K$ Ω	$T_{NAT} + 5K$ Ω			Min. qty. +	50 +	100 +	250 +	500 +
V_{max} (40 °C) = 30 V										
60	≤ 250	≤ 570	≥ 570	Q63100-P331-C8	25					
70	≤ 250	≤ 570	≥ 570	Q63100-P341-C8	25					
80	≤ 250	≤ 570	≥ 570	Q63100-P351-C8	25					
90	≤ 250	≤ 550	≥ 1330	Q63100-P361-C8	25					
100	≤ 250	≤ 550	≥ 1330	Q63100-P371-C8	25					
110	≤ 250	≤ 550	≥ 1330	Q63100-P381-C8	25					
120	≤ 250	≤ 550	≥ 1330	Q63100-P391-C8	25					

PTC Thermistors

Temperature sensor for measuring and control applications

Coated



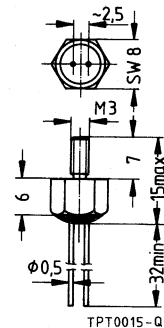
Dimensions in mm

T_{NAT}	R_R ($V_{PTC} \leq 2,5 V$)	R_{PTC} ($V_{PTC} \leq 2,5 V$)		Ordering code	Min. qty.	Price each				
		$T_{NAT}-5K$	$T_{NAT}+5K$			Min. qty. +	50 +	100 +	250 +	500 +
°C	Ω	Ω	Ω							
V_{max} (40 °C) = 30 V										
60	≤ 100	≤ 570	≥ 570	Q63100-P331-C100	20					
70	≤ 100	≤ 570	≥ 570	Q63100-P341-C100	20					
80	≤ 100	≤ 570	≥ 570	Q63100-P351-C100	20					
90	≤ 100	≤ 550	≥ 1330	Q63100-P361-C100	20					
100	≤ 100	≤ 550	≥ 1330	Q63100-P371-C100	20					
110	≤ 100	≤ 550	≥ 1330	Q63100-P381-C100	20					
120	≤ 100	≤ 550	≥ 1330	Q63100-P391-C100	20					

PTC Thermistors

Temperature sensor
for measuring and control applications

Screw-type case



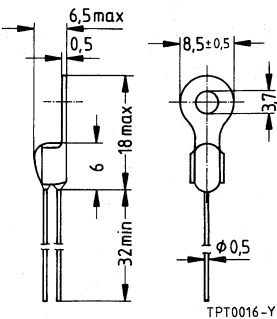
Dimensions in mm

T_{NAT} °C	R_R ($V_{PTC} \leq 2,5 V$) Ω	R_{PTC} ($V_{PTC} \leq 2,5V$)		Ordering code	Min. qty.	Price each			
		$T_{NAT} - 5K$ Ω	$T_{NAT} + 5K$ Ω			Min. qty. +	50 +	100 +	500 +
V_{max} (40 °C) = 30 V; test voltage terminals/case 1,5 kV ac									
60	≤ 100	≤ 570	≥ 570	Q63100-P331-D801	25				
70	≤ 100	≤ 570	≥ 570	Q63100-P341-D801	25				
80	≤ 100	≤ 570	≥ 570	Q63100-P351-D801	25				
90	≤ 100	≤ 550	≥1330	Q63100-P361-D801	25				
100	≤ 100	≤ 550	≥1330	Q63100-P371-D801	25				
110	≤ 100	≤ 550	≥1330	Q63100-P381-D801	25				
120	≤ 100	≤ 550	≥1330	Q63100-P391-D801	25				
130	≤ 100	≤ 550	≥1330	Q63100-P401-D801	25				
140	≤ 100	≤ 550	≥1330	Q63100-P411-D801	25				

PTC Thermistors

Temperature sensor
for measuring and control applications

Mounting tag: tinned brass

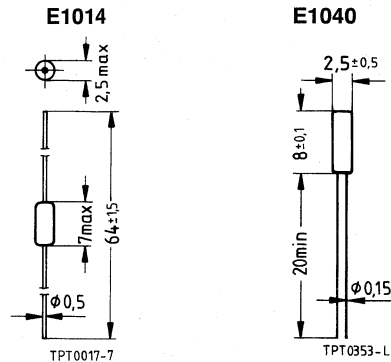


Dimensions in mm

T _{NAT} °C	R _R (V _{PTC} ≤ 2,5 V)	R _{PTC} (V _{PTC} ≤ 2,5V)		Ordering code	Min. qty.	Price each				
	T _{NAT} - 5K	T _{NAT} + 5K	Min. qty. +			50 +	100 +	500 +		
V _{max} (40 °C) = 30 V; test voltage terminals/case 500 V/5 s										
60	≤ 100	≤ 570	≥ 570	Q63100-P331-D901	25					
70	≤ 100	≤ 570	≥ 570	Q63100-P341-D901	25					
80	≤ 100	≤ 570	≥ 570	Q63100-P351-D901	25					
90	≤ 100	≤ 550	≥ 1330	Q63100-P361-D901	25					
100	≤ 100	≤ 550	≥ 1330	Q63100-P371-D901	25					
110	≤ 100	≤ 550	≥ 1330	Q63100-P381-D901	25					
120	≤ 100	≤ 550	≥ 1330	Q63100-P391-D901	25					
130	≤ 100	≤ 550	≥ 1330	Q63100-P401-D901	25					
140	≤ 100	≤ 550	≥ 1330	Q63100-P411-D901	25					

PTC Thermistors

Thermistor as level indicator
Glass case, hermetically sealed



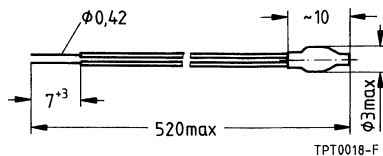
Dimensions in mm

Type	I ¹) (25 °C)	I ²) (50 °C)	Ordering code	Min. qty.	Price each				
	mA	mA			Min. qty. +	20 +	50 +	100 +	
V _{max} (60 °C) = 24 V									
▼ E1014	≤ 26,7	≥ 41,7	B59014-E1160-A40	10					
▼ E1040	< 40	> 60	B59040-E1160-A40	10					

1) PTC current in still air at $T_A = 25\text{ °C}$
2) PTC current in still fuel oil "light" (Shell S 5585) at $T_A = 50\text{ °C}$

PTC Thermistors

Thermistor for motor protection



Dimensions in mm

T_{NAT} °C	R_{PTC} ($V_{PTC} \leq 2,5$ V)		Ordering code	Min. qty.	Price each				
	$T_{NAT} - 5$ K	$T_{NAT} + 5$ K			Min. qty. +	50 +	100 +	250 +	500 +
	Ω	Ω							

$V_{max} = 30$ V, $R_R \leq 250 \Omega$

60	≤ 570	≥ 570	Q63100-P331-M135	5					
70	≤ 570	≥ 570	Q63100-P341-M135	5					
80	≤ 570	≥ 570	Q63100-P351-M135	5					
90	≤ 550	≥ 1330	Q63100-P361-M135	5					
100	≤ 550	≥ 1330	Q63100-P371-M135	5					
110	≤ 550	≥ 1330	Q63100-P381-M135	5					
120	≤ 550	≥ 1330	Q63100-P391-M135	5					
130	≤ 550	≥ 1330	Q63100-P401-M135	5					
140	≤ 550	≥ 1330	Q63100-P411-M135	5					
145	≤ 550	≥ 1330	Q63100-P416-M135	5					
150	≤ 550	≥ 1330	Q63100-P421-M135	5					
155	≤ 550	≥ 1330	Q63100-P426-M135	5					
160	≤ 550	≥ 1330	Q63100-P431-M135	5					
170 ¹⁾	≤ 570	≥ 570	Q63100-P441-M135	5					
180 ¹⁾	≤ 570	≥ 570	Q63100-P451-M135	5					

$V_{max} = 30$ V³⁾, 25 V⁴⁾; $R_R \leq 100 \Omega$

60	≤ 570	≥ 570	B59100-M1060-A70	5					
70	≤ 570	≥ 570	B59100-M1070-A70	5					
80	≤ 570	≥ 570	B59100-M1080-A70	5					
90	≤ 550	≥ 1330	B59100-M1090-A70	5					
100	≤ 550	≥ 1330	B59100-M1100-A70	5					
110	≤ 550	≥ 1330	B59100-M1110-A70	5					
120	≤ 550	≥ 1330	B59100-M1120-A70	5					
130	≤ 550	≥ 1330	B59100-M1130-A70	5					
140	≤ 550	≥ 1330	B59100-M1140-A70	5					
145	≤ 550	≥ 1330	B59100-M1145-A70	5					
150	≤ 550	≥ 1330	B59100-M1150-A70	5					
155	≤ 550	≥ 1330	B59100-M1155-A70	5					
160	≤ 550	≥ 1330	B59100-M1160-A70	5					
170 ²⁾	≤ 570	≥ 570	B59100-M1170-A70	5					
180 ²⁾	≤ 570	≥ 570	B59100-M1180-A70	5					

¹⁾ $T_{NAT} \pm 7$ K

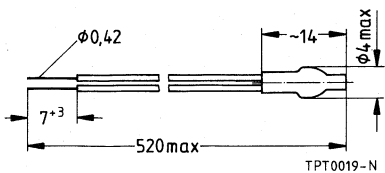
²⁾ $T_{NAT} \pm 6$ K

³⁾ Applies to $T_{NAT} = 90 \dots 160$ °C

⁴⁾ Applies to $T_{NAT} = 60 \dots 80$ °C and $170 \dots 180$ °C

PTC Thermistors

Thermistor for motor protection



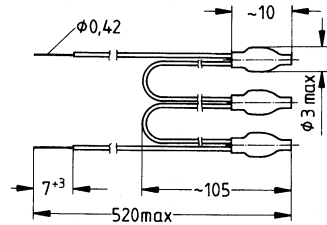
Dimensions in mm

T_{NAT} °C	R_{PTC} ($V_{PTC} \leq 2,5$ V)		Ordering code	Min. qty.	Price each				
	$T_{NAT}-5$ K	$T_{NAT}+5$ K			Min. qty. +	50 +	100 +	250 +	500 +
$V_{max} = 30$ V, $R_R \leq 100$ Ω									
60	≤ 570	≥ 570	Q63100-P331-M155	5					
70	≤ 570	≥ 570	Q63100-P341-M155	5					
80	≤ 570	≥ 570	Q63100-P351-M155	5					
90	≤ 550	≥ 1330	Q63100-P361-M155	5					
100	≤ 550	≥ 1330	Q63100-P371-M155	5					
110	≤ 550	≥ 1330	Q63100-P381-M155	5					
120	≤ 550	≥ 1330	Q63100-P391-M155	5					
130	≤ 550	≥ 1330	Q63100-P401-M155	5					
140	≤ 550	≥ 1330	Q63100-P411-M155	5					
145	≤ 550	≥ 1330	Q63100-P416-M155	5					
150	≤ 550	≥ 1330	Q63100-P421-M155	5					
155	≤ 550	≥ 1330	Q63100-P426-M155	5					
160	≤ 550	≥ 1330	Q63100-P431-M155	5					
170 ¹⁾	≤ 550	≥ 1330	Q63100-P441-M155	5					
180 ¹⁾	≤ 550	≥ 1330	Q63100-P451-M155	5					

¹⁾ $T_{NAT} \pm 6$ K

PTC Thermistors

Thermistor for motor protection



Dimensions in mm

T_{NAT} °C	R_{PTC} ($V_{PTC} \leq 2,5$ V)		Ordering code	Min. qty.	Price each				
	$T_{NAT}-5$ K	$T_{NAT}+5$ K			Min. qty. +	50 +	100 +	250 +	500 +
	Ω	Ω							

$V_{max} = 30$ V, $R_R \leq 750 \Omega$

60	≤ 1710	≥ 1710	Q63100-P331-M335	5					
70	≤ 1710	≥ 1710	Q63100-P341-M335	5					
80	≤ 1710	≥ 1710	Q63100-P351-M335	5					
90	≤ 1650	≥ 3990	Q63100-P361-M335	5					
100	≤ 1650	≥ 3990	Q63100-P371-M335	5					
110	≤ 1650	≥ 3990	Q63100-P381-M335	5					
120	≤ 1650	≥ 3990	Q63100-P391-M335	5					
130	≤ 1650	≥ 3990	Q63100-P401-M335	5					
140	≤ 1650	≥ 3990	Q63100-P411-M335	5					
145	≤ 1650	≥ 3990	Q63100-P416-M335	5					
150	≤ 1650	≥ 3990	Q63100-P421-M335	5					
155	≤ 1650	≥ 3990	Q63100-P426-M335	5					
160	≤ 1650	≥ 3990	Q63100-P431-M335	5					
170 ¹⁾	≤ 1710	≥ 1710	Q63100-P441-M335	5					
180 ¹⁾	≤ 1710	≥ 1710	Q63100-P451-M335	5					

$V_{max} = 30$ V²⁾, 25 V³⁾; $R_R = 300 \Omega$

60	≤ 1710	≥ 1710	B59300-M1060-A70	5					
70	≤ 1710	≥ 1710	B59300-M1070-A70	5					
80	≤ 1710	≥ 1710	B59300-M1080-A70	5					
90	≤ 1650	≥ 3990	B59300-M1090-A70	5					
100	≤ 1650	≥ 3990	B59300-M1100-A70	5					
110	≤ 1650	≥ 3990	B59300-M1110-A70	5					
120	≤ 1650	≥ 3990	B59300-M1120-A70	5					
130	≤ 1650	≥ 3990	B59300-M1130-A70	5					
140	≤ 1650	≥ 3990	B59300-M1140-A70	5					
145	≤ 1650	≥ 3990	B59300-M1145-A70	5					
150	≤ 1650	≥ 3990	B59300-M1150-A70	5					
155	≤ 1650	≥ 3990	B59300-M1155-A70	5					
160	≤ 1650	≥ 3990	B59300-M1160-A70	5					
170 ¹⁾	≤ 1710	≥ 1710	B59300-M1170-A70	5					
180 ¹⁾	≤ 1710	≥ 1710	B59300-M1180-A70	5					

¹⁾ $T_{NAT} \pm 7$ K

²⁾ Applies to $T_{NAT} = 90 \dots 160$ °C

³⁾ Applies to $T_{NAT} = 60 \dots 80$ °C and $170 \dots 180$ °C

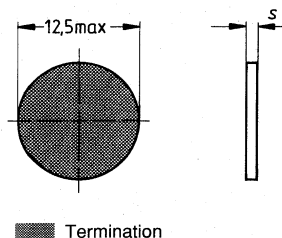
PTC Thermistors

Thermistor as heating element

Dimensions in mm

Type	S _{max}
-A60	1,3
-A66	2,2

Max. curvature 0,2 mm



V _{max}	T _{ref}	R _R		ΔR _R	Ordering code	Min. qty.	Price each				
		(V _{meas} ≤ 1,5 V)					Min. qty. +	50 +	100 +	250 +	500 +
V	°C	Ω	%								
30	0	≥ 320	± 30	Q63100-P270-A60	25						
30	40	9	± 30	Q63100-P310-A60	25						
30	60	9	± 30	Q63100-P330-A60	25						
30	80	9	± 30	Q63100-P350-A60	25						
30	120	9	± 30	Q63100-P390-A60	25						
30	160	9	± 30	Q63100-P430-A60	25						
30	180	9	± 30	Q63100-P450-A60	25						
30	220	9	± 30	Q63100-P2492-A60	25						
265	50	1,2 k	± 35	Q63100-P2322-A66	25						
265	70	1,2 k	± 35	Q63100-P2342-A66	25						
265	90	1,2 k	± 35	Q63100-P2362-A66	25						
265	110	1,2 k	± 35	Q63100-P2392-A66	25						
265	130	1,2 k	± 35	Q63100-P2412-A66	25						
265	150	1,2 k	± 35	Q63100-P2432-A66	25						
265	180	1,7 k	± 35	Q63100-P2462-A66	25						
265	220	1,7 k	± 35	Q63100-P2502-A66	25						

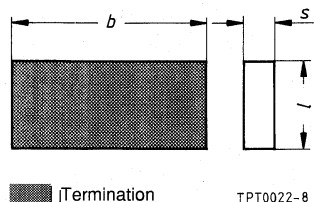
PTC Thermistors

Thermistor as heating element

Dimensions in mm

Type	b_{max}	l_{max}	s_{max}
-R200	20,5	14,5	1,3
-R222	20,5	14,5	2,1
-R262	20,5	14,5	2,35
-R822	14,5	7,5	2,1

Max. curvature 0,05 mm



V_{max} V	T_{ref} °C	R_R ($V_{meas} \leq 1,5$ V)		Ordering code	Min. qty.	Price each				
		Ω	%			Min. qty. +	100 +	250 +	500 +	1000 +
30	40	3,6	± 30	Q63100-P310-R200	10					
30	60	3,6	± 30	Q63100-P330-R200	10					
30	80	3,6	± 30	Q63100-P350-R200	10					
30	120	3,6	± 30	Q63100-P390-R200	10					
30	160	3,6	± 30	Q63100-P430-R200	10					
30	180	3,6	± 30	Q63100-P450-R200	10					
30	220	3,6	± 30	Q63100-P2492-R200	10					
265	50	600	± 50	Q63100-P2322-R222	10					
265	70	600	± 50	Q63100-P2342-R222	10					
265	90	600	± 50	Q63100-P2362-R222	10					
265	110	600	± 50	Q63100-P2392-R222	10					
265	130	600	± 50	Q63100-P2412-R222	10					
265	150	600	± 50	Q63100-P2432-R222	10					
265	180	900	± 50	Q63100-P2462-R222	10					
265	220	900	± 50	Q63100-P2502-R222	10					
265	270	1,7 k	± 50	Q63100-P2542-R262	10					
265	50	1,4 k	± 50	Q63100-P2322-R822	20					
265	110	1,4 k	± 50	Q63100-P2392-R822	20					
265	150	1,4 k	± 50	Q63100-P2432-R822	20					
265	220	2,0 k	± 50	Q63100-P2502-R822	20					

Microwave Ceramics

Contents	Type	Page
Dielectric resonators	B69500-A★★★★	180
	B69500-C★★★★/-E★★★★	181
Coaxial ceramic resonators (cylindrical shape)	B69500-R5522-A★★★★	182
	B69500-S6025-A★★★★	183
	B69500-S6025-B★★★	183
	B69500-T5723-B★★★	183
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DUPLEXER	B69590-D★★★-P★4	188
5-pole	B69590-A9★★-P255	189

▼ Newly included in this edition

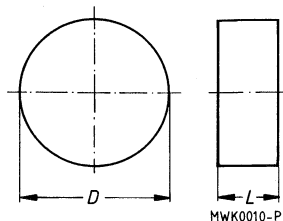
Dielectric resonators	B69500-A★★★★	180
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Further technical literature

Short Form Catalog "Microwave Ceramics", B5-P2512-X-X-7400
 Offprint "Ceramic Resonators for Highly Stable Oscillators", B5-P2518-X-X-7600
 Offprint "Coaxial Ceramic Resonators for UHF and Microwaves", B5-P2519-X-X-7600

Dielectric resonators

Frequency-determining components
in microwave engineering



Resonance frequency f_r GHz	Dimensions		Ordering code	Min. qty.	Price each			
	D mm	L mm			Min. qty. +	5 +	10 +	25 +

Material: (Zr, Sn) TiO₄

Permittivity ϵ 37,8 $\pm$ 0,4

Temperature coefficient 0 ppm/K

▼ 2,2	24,5	9,8	B69500-A2207	2				
▼ 2,9	18,6	7,4	B69500-A2907	2				
▼ 3,3	16,4	6,6	B69500-A3307	2				
▼ 3,9	13,8	5,5	B69500-A3907	2				
▼ 5,1	10,6	4,2	B69500-A5107	2				
▼ 5,4	10,0	4,0	B69500-A5407	2				
▼ 5,8	9,3	3,7	B69500-A5807	2				
▼ 6,5	8,3	3,3	B69500-A6507	2				
▼ 7,3	7,4	3,0	B69500-A7307	2				
▼ 8,2	6,6	2,6	B69500-A8207	2				
▼ 9,1	5,9	2,4	B69500-A9107	2				
▼ 10,0	5,4	2,2	B69500-A1008	2				
▼ 10,5	5,1	2,0	B69500-A1058	2				
▼ 11,5	4,7	1,9	B69500-A1158	2				
▼ 12,2	4,4	1,8	B69500-A1228	2				
▼ 13,7	3,9	1,6	B69500-A1378	2				
▼ 15,6	3,5	1,4	B69500-A1568	2				

Microwave Ceramics

Dielectric resonators

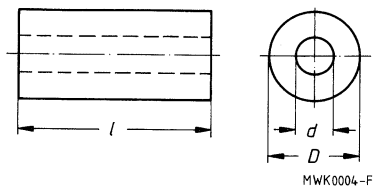
Resonance frequency f_r GHz	Dimensions		Ordering code	Min. qty.	Price each				
	D mm	L mm			Min. qty. +	5 +	10 +	25 +	
Material: Ba (ZrZnTa)O ₃					Permittivity ϵ 28,4 $\pm$ 0,4				
Temperature coefficient 0 ppm/K									
▼ 4,5	13,8	5,5	B69500-C4507	2					
▼ 5,8	10,7	4,3	B69500-C5807	2					
▼ 6,5	9,5	3,8	B69500-C6507	2					
▼ 7,3	8,5	3,4	B69500-C7307	2					
▼ 8,2	7,6	3,0	B69500-C8207	2					
▼ 10,0	6,2	2,5	B69500-C1008	2					
▼ 13,7	4,5	1,8	B69500-C1378	2					
▼ 16,0	3,9	1,6	B69500-C1608	2					
▼ 18,0	3,4	1,4	B69500-C1808	2					
▼ 20,0	3,1	1,2	B69500-C2008	2					
▼ 22,0	2,8	1,1	B69500-C2208	2					
▼ 24,0	2,6	1,0	B69500-C2408	2					
Material: BaO-PbO-Nd ₂ O ₃ -TiO ₂					Permittivity ϵ 88 $\pm$ 5 (typ.: 91)				
Temperature coefficient 0 ppm/K									
▼ 1,5	23,3	9,3	B69500-E1507	2					
▼ 2,0	17,5	7,0	B69500-E2007	2					
▼ 2,4	14,6	5,8	B69500-E2407	2					
▼ 2,8	12,5	5,0	B69500-E2807	2					
▼ 3,2	10,9	4,4	B69500-E3207	2					
▼ 3,7	9,5	3,8	B69500-E3707	2					
▼ 4,2	8,3	3,3	B69500-E4207	2					
▼ 5,0	7,0	2,8	B69500-E5007	2					
▼ 6,0	5,8	2,3	B69500-E6007	2					
▼ 7,5	4,7	1,9	B69500-E7507	2					

Coaxial ceramic resonators

$\lambda/4$ line resonators

The front end as well as the outer and inner surface of the cylinder jacket are silver-plated.

Cylindrical version



Resonance frequency f_r MHz	Dimensions			Ordering code	Min. qty.	Price each				
	D mm	d mm	l mm			Min. qty. +	10 +	25 +	50 +	

Material: $\text{MgTiO}_3\text{-CaTiO}_3$

Permittivity $\epsilon 21,3 \pm 0,4$

Temperature coefficient 0 ppm/K

▼ 2500	5,5	2,2	6,6	B69500-R5522-A250	5					
▼ 3000	5,5	2,2	5,5	B69500-R5522-A300	5					
▼ 3500	5,5	2,2	4,7	B69500-R5522-A350	5					
▼ 4000	5,5	2,2	4,2	B69500-R5522-A400	5					
▼ 4500	5,5	2,2	3,7	B69500-R5522-A450	5					

Microwave Ceramics

Coaxial ceramic resonators

Resonance frequency f_r MHz	Dimensions			Ordering code	Min. qty.	Price each				
	D mm	d mm	l mm			Min. qty. +	10 +	25 +	50 +	

Material: (Zr, Sn) TiO₄

Permittivity ϵ 37,8 $\pm$ 0,4

Temperature coefficient 0 ppm/K

900	6,0	2,5	14,0	B69500-S6025-B900	5					
950	6,0	2,5	13,3	B69500-S6025-B950	5					
▼ 1000	6,0	2,5	12,6	B69500-S6025-A100	5					
1100	6,0	2,5	11,5	B69500-S6025-A110	5					
▼ 1150	6,0	2,5	11,0	B69500-S6025-A115	5					
1200	6,0	2,5	10,5	B69500-S6025-A120	5					
▼ 1300	6,0	2,5	9,7	B69500-S6025-A130	5					
1500	6,0	2,5	8,4	B69500-S6025-A150	5					
▼ 1600	6,0	2,5	7,9	B69500-S6025-A160	5					
▼ 1700	6,0	2,5	7,4	B69500-S6025-A170	5					
▼ 2000	6,0	2,5	6,3	B69500-S6025-A200	5					
2400	6,0	2,5	5,3	B69500-S6025-A240	5					

Material: BaO-PbO-Nd₂O₃-TiO₂

Permittivity ϵ 88 $\pm$ 5 (typ.: 91)

Temperature coefficient 0 ppm/K

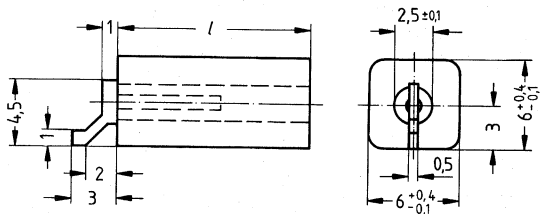
▼ 400	5,7	2,3	20,0	B69500-T5723-B400	5					
▼ 450	5,7	2,3	17,8	B69500-T5723-B450	5					
▼ 500	5,7	2,3	16,0	B69500-T5723-B500	5					
▼ 550	5,7	2,3	14,5	B69500-T5723-B550	5					
▼ 600	5,7	2,3	13,3	B69500-T5723-B600	5					
▼ 650	5,7	2,3	12,3	B69500-T5723-B650	5					
▼ 700	5,7	2,3	11,4	B69500-T5723-B700	5					
▼ 750	5,7	2,3	10,7	B69500-T5723-B750	5					
▼ 800	5,7	2,3	10,0	B69500-T5723-B800	5					
▼ 850	5,7	2,3	9,4	B69500-T5723-B850	5					

Coaxial ceramic resonators

$\lambda/4$ line resonators

The front end as well as the inner and outer surface of the cylinder jacket are silver-plated.

Cubic version with solder terminal at internal conductor



Resonance frequency <i>f_r MHz</i>	Dimension <i>l</i> mm	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	
Material: (Zr, Sn) TiO ₄				Permittivity ε 37,8 ± 0,4				
Temperature coefficient 0 ppm/K								
900	14,0	B69500-N6025-B900	5					
950	13,3	B69500-N6025-B950	5					
1000	12,6	B69500-N6025-A100	5					
1100	11,5	B69500-N6025-A110	5					
1150	11,0	B69500-N6025-A115	5					
1200	10,5	B69500-N6025-A120	5					
1300	9,7	B69500-N6025-A130	5					
1500	8,4	B69500-N6025-A150	5					
1600	7,9	B69500-N6025-A160	5					
1700	7,4	B69500-N6025-A170	5					
2000	6,3	B69500-N6025-A200	5					
2400	5,3	B69500-N6025-A240	5					

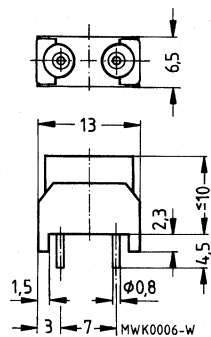
Microwave Ceramics

Coaxial ceramic resonators

Resonance frequency <i>f_r MHz</i>	Dimension <i>l</i> mm	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	
Material: BaO-PbO-Nd ₂ O ₃ -TiO ₂ Temperature coefficient 0 ppm/K				Permittivity ε 88 ± 5 (typ.: 91)				
▼ 400	20,0	B69500-P6025-B400	5					
▼ 450	17,8	B69500-P6025-B450	5					
▼ 500	16,0	B69500-P6025-B500	5					
▼ 550	14,5	B69500-P6025-B550	5					
▼ 600	13,3	B69500-P6025-B600	5					
▼ 650	12,3	B69500-P6025-B650	5					
▼ 700	11,4	B69500-P6025-B700	5					
▼ 750	10,7	B69500-P6025-B750	5					
▼ 800	10,0	B69500-P6025-B800	5					
▼ 850	9,4	B69500-P6025-B850	5					
Material: MgTiO ₃ -CaTiO ₃ Temperature coefficient 0 ppm/K				Permittivity ε 21,3 ± 0,4				
▼ 2500	6,6	B69500-Q6025-A250	5					
▼ 3000	5,5	B69500-Q6025-A300	5					
▼ 3500	4,7	B69500-Q6025-A350	5					
▼ 4000	4,2	B69500-Q6025-A400	5					
▼ 4500	3,7	B69500-Q6025-A450	5					

Bandpass filters (2-pole) for cordless telephones for mobile radio for remote control for satellite navigation

Voltage standing wave ratio
VSWR max. 2,0



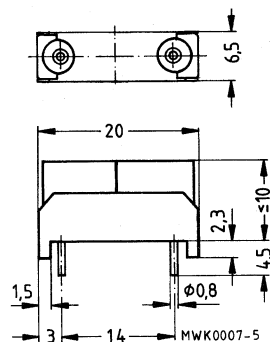
Dimensions in mm

Center frequency f_c MHz	Insertion loss a_e dB	Ordering code	Min. qty.	Price each				
				Min. qty. +	5 +	10 +	25 +	
for cordless telephones				Amplitude ripple 0,5 dB				
▼ 914,5 ± 0,5	2,2	B69590-M914-P12	2					
▼ 959,5 ± 0,5	2,2	B69590-M959-P12	2					
▼ 886,0 ± 1,0	2,2	B69590-M886-P22	2					
▼ 931,0 ± 1,0	2,2	B69590-M931-P22	2					
for mobile radio NMT 900, GSM				Amplitude ripple 0,8 dB				
▼ 902,5 ± 12,5	1,8	B69590-M902-P252	2					
▼ 947,5 ± 12,5	1,8	B69590-M947-P252	2					
for remote control				Consisting of coupled single resonators				
▼ 434,0 ± 8,0	2,5	B69590-A434-P82	2					
for satellite navigation GPS				Amplitude ripple 1,0 dB				
▼ 1575,0 ± 10,0	2,0	B69590-M1575-P202	2					

Microwave Ceramics

Bandpass filters (3-pole) for cordless telephones for mobile radio for satellite navigation

Voltage standing wave ratio
VSWR max. 2,0



Dimensions in mm

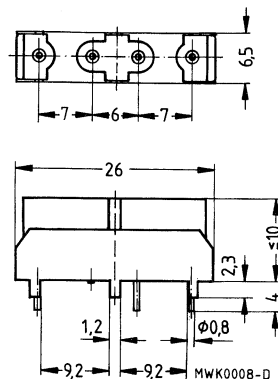
Center frequency f_c MHz	Insertion loss a_e dB	Ordering code	Min. qty.	Price each				
				Min. qty. +	5 +	10 +	25 +	
for cordless telephones				Amplitude ripple 0,5 dB				
▼ 914,5 ± 0,5	4,0	B69590-M914-P13	2					
▼ 959,5 ± 0,5	4,0	B69590-M959-P13	2					
▼ 886,0 ± 1,0	4,0	B69590-M886-P23	2					
▼ 931,0 ± 1,0	4,0	B69590-M931-P23	2					
for mobile radio NMT 900, GSM				Amplitude ripple 0,8 dB				
▼ 902,5 ± 12,5	2,0	B69590-M902-P253	2					
▼ 947,5 ± 12,5	2,0	B69590-M947-P253	2					
for satellite navigation GPS				Amplitude ripple 1,0 dB				
▼ 1575,0 ± 10,0	3,0	B69590-M1575-P203	2					

Bandpass filters (DUPLEXER) for cordless telephones

Amplitude ripple 0,5 dB

Voltage standing wave ratio

VSWR max. 2,0



Dimensions in mm

Center frequency f_c MHz	Insertion loss a_e dB	Ordering code	Min. qty.	Price each			
				Min. qty. +	5 +	10 +	25 +
▼ 914,5/959,5 ± 0,5	2,2	B69590-D914-P14	2				
▼ 886,0/931,0 ± 1,0	2,2	B69590-D886-P24	2				

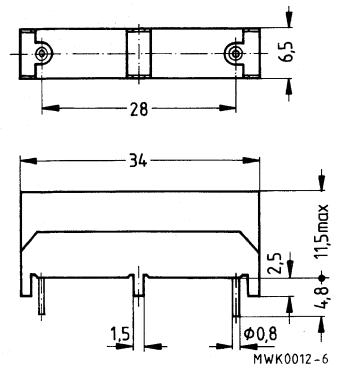
Microwave Ceramics

Bandpass filters (5-pole) for mobile radio NMT900, GSM

Amplitude ripple 1,0 dB

Voltage standing wave ratio

VSWR max. 2,0



Dimensions in mm

Center frequency f_c MHz	Insertion loss a_e dB	Ordering code	Min. qty.	Price each				
				Min. qty. +	5 +	10 +	25 +	
▼ 902,5 ± 12,5	3,0	B69590-A902-P255	2					
▼ 947,5 ± 12,5	3,0	B69590-A947-P255	2					

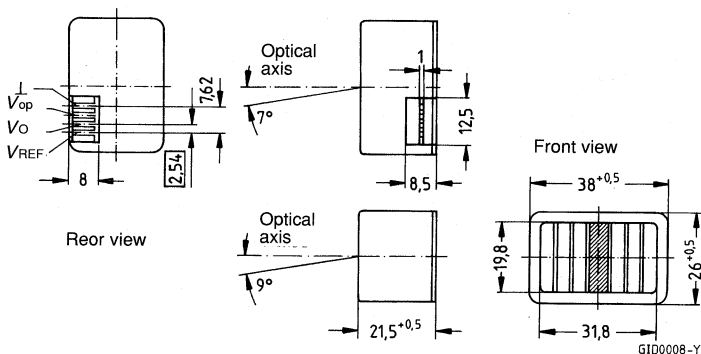
Passive IR Detector

Contents	Type	Page
Passive IR detector	PID 20	192
Connector for PID 20		192

Passive IR Detector PID 20

Principle: pyroelectric compensation detector made of polymer film plus a preamplifier

The passive IR detector converts the body heat radiation (IR radiation) to electrical pulses. This sensor therefore serves as a basis for a variety of technical applications, e.g. proximity switches or control units.



Type	Ordering code	Min. qty.	Price each			
			Min. qty. +	10 +	50 +	
PID 20	Q63100-P20	2				
Connector for 0,22 mm ² litz wire or Ø 0,5 ... 0,6 mm solid wire	Q63100-P20-A1	2				
Connector for 0,15 mm ² litz wire or Ø 0,4 mm solid wire	Q63100-P20-A2	2				

Passive IR Detector PID 20

Characterisitics ($T_A = 25\text{ }^{\circ}\text{C}$)

Operating temperature range ¹⁾	T_A	$-20 \dots +70$	$^{\circ}\text{C}$
Rated operating voltage	V_{Rop}	5	V
Operating voltage ²⁾	V_{op}	$5 \pm 10\%$	V
Output signal ($V_{\text{op}} = V_{\text{Rop}}$) (Object area $300 \times 400\text{ mm}$, temperature difference $\pm 5\text{ }^{\circ}\text{C}$ to ambient, distance 1,5 m)	ΔV_O	1,8	V
Reference voltage	V_{REF}	$\frac{V_{\text{op}} - 0,7}{2}$	V
Output voltage	V_O	$V_{\text{REF}} \pm \Delta U_O$	V
Input current ($V_{\text{Rop}} = 5\text{ V}$)	I_i	0,2	mA
Output impedance ($V_{\text{Rop}} = 5\text{ V}$)	Z_O	≥ 100	$\text{k}\Omega$
Range ($T_A = 22\text{ }^{\circ}\text{C}$)		approx. 7	m
Response time	τ	500	ms

¹⁾ Resistance to thermal cycling in accordance with VDE 0664, part 1.

²⁾ When the detector is line-operated, shock-hazard protection to VDE guidelines must be ensured.

Constituent parts of the detector:

Sensing element

Compensation detector

Optics (parabolic reflector)

Case (electrical shielding)

Amplifier circuit

Connector

The PID 20 comes in plug-in version. An insulation displacement connector permits solderless connection between the PID 20 and the evaluator circuit.

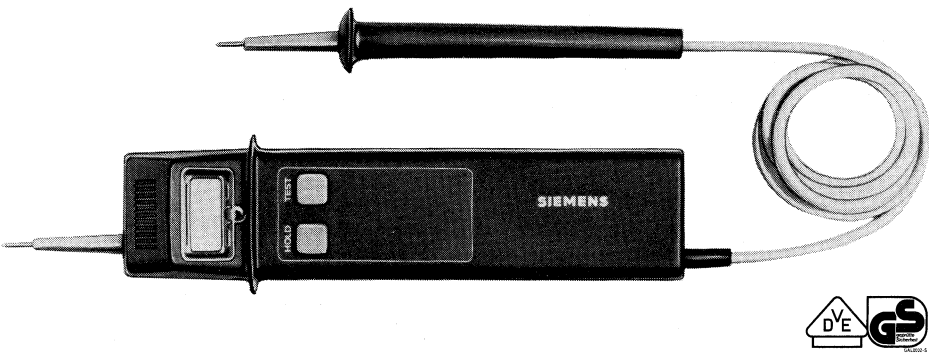
Voltage Testers

Contents	Type	Page
Digital voltage tester	Q63100-D422	196
Car Check	Q63100-D430	197
Universal tester 1	Q63100-D433	198
Universal voltage tester	Q63100-D434	199

Further technical literature

Data Sheet Collection "Electronic Voltage Testers", B4-B3937-X-X-7400

Digital Voltage Tester



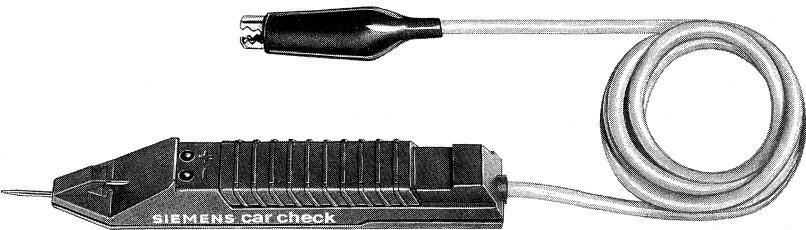
Microprocessor-controlled digital voltage tester with dc/ac indication, continuity test function and buzzer, for general-purpose applications with large voltage ranges.

- DC and AC voltage test
- Phase-to-ground test
- Polarity test
- LED as voltage indicator integrated into display window; operates independently of electronic circuitry
- Diode test; i.e. polarity-dependent continuity test incl. acoustic indication
- Battery test incl. "low bat" indication on display

Input resistance	≥ 660 kΩ
Input voltage	1 V dc/ac ... 999 V dc/ac
Insulation test voltage	5 kV
Surge voltage strength	10 kV _{os} (1,2/50 μs pulse wave)
High-voltage strength	1 kV
Input current	approx. 1,5 mA at 999 V
Operating temperature range	– 10 °C ... + 50 °C
Frequency range	20 Hz ... 2 kHz
Continuity test	0 ... 500 kΩ
Battery type	9 V block

Designation	Ordering code	Price each				
		1 +	6 +	12 +		
Digital voltage tester	Q63100-D422					

Car Check



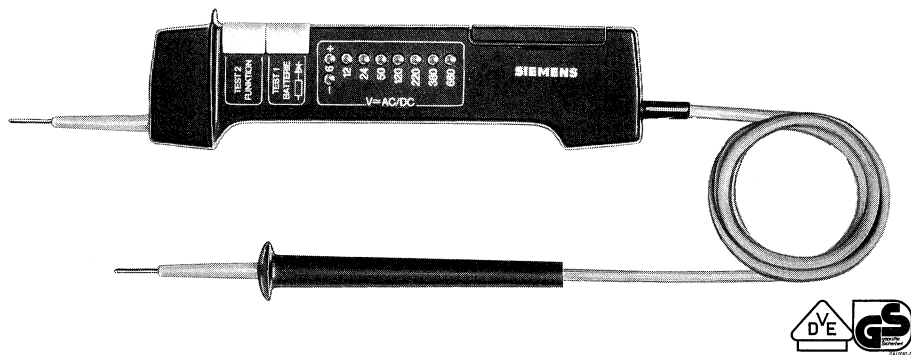
Special voltage tester for use in passenger cars and motor trucks

- Voltage test
- Visual indication
- Battery test
- Cable test
- Cable test Plus/Minus
- Test probe and test needle for testing insulated cables
- Tie wraps for easy cable binding, even in the wiring harness

Voltage range	3 ... 48 Vdc
Test device	test probe and test needle with alignment mechanism, crocodile clip to ground
Voltage indication	2 LEDs (light-emitting diodes)
Cable length	approx. 130 cm
Current consumption	1,5 mA

Designation	Ordering code	Price each				
		1 +	6 +	12 +	24 +	
Car Check	Q63100-D430					

Universal Tester 1



- Combined voltage and continuity tester
- DC and AC voltage test
- Phase-to-ground test
- Polarity and continuity test as well as polarity-dependent continuity test (diode test)
- Acoustic and visual indication
- Foolproof
- Safe against voltage surges
- Shock-hazard protection through high input resistance
- Dual series resistors
- Battery test
- Input resistance

≥ 660 kΩ
- Rated voltage range

6 ... 660 V dc/ac
- Insulation test voltage

5 kV
- Surge voltage strength

5 kV_{OS} (1,2/50 μs pulse wave)
- Operating temperature range

− 10 °C ... + 50 °C
- Frequency range

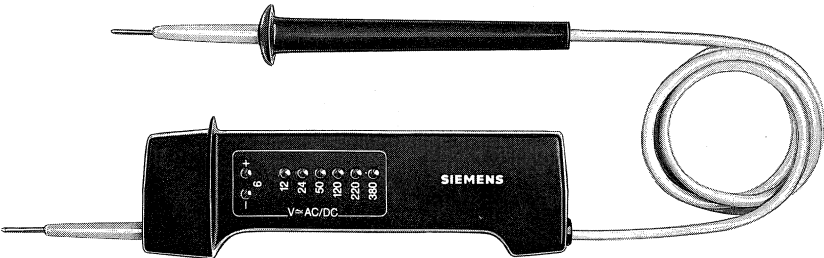
0 ... 100 Hz
- Battery voltage

12 Vdc
- Resistance range

0 ... ≈ 2 MΩ
- (for continuity test)

Designation	Ordering code	Price each				
		1 +	6 +	12 +	24 +	
Universal tester 1	Q63100-D433					
Spare battery	Q63100-D407-C1					

Universal Voltage Tester



The 2-pole voltage tester is PTC-controlled (PTC = resistance with positive temperature coefficient) and is suitable for working on electrical equipment and for detecting life parts.

DC and AC voltage test

Four low-voltage and ranges and three line voltage ranges

Polarity test at dc voltage

Input resistance

2 k Ω ... 50 k Ω

Rated voltage range

6 ... 380 V dc/ac

Insulation test voltage

5 kV

Surge voltage strength

up to 5 kV_{os} (1,2/50 μ s pulse wave)

Operating temperature range

- 10 °C ... + 50 °C

Frequency range

0 ... 60 Hz

ON-period after max.

30 s

Designation	Ordering code	Price each				
		1 +	6 +	12 +	24 +	
Universal voltage tester	Q63100-D434					

Varistors

Contents	Type	Page
Metal oxide varistors SIOV		
Chip varistors »SMD«	SIOV-CN1210+★G	203
	SIOV-CN2220+★G	203
	SIOV-CU3225K★★★G	204
	SIOV-CU4032K★★★G	205
Disk varistors	SIOV-SR1210+★+	206
	SIOV-SR2220+★+	206
	SIOV-S05K★★★	207
	SIOV-S07K★★★	208
	SIOV-S10K★★★	209
	SIOV-S14K★★★★	210
	SIOV-S20K★★★★	211
Automotive varistors	SIOV-S10K★★AUTO	212
	SIOV-S14K★★AUTO	212
	SIOV-S20K★★AUTO	212
Hicap varistors	SHCV-SR2K20M★★★X	213
	SHCV-SR2K20M★★★Z	213
Block varistors	SIOV-B25K★★★	214
	SIOV-B32K★★★	214
	SIOV-B40K★★★	214
	SIOV-B60K★★★★	215
	SIOV-B80K★★★★	215

Further technical literature

Short Form Catalog "Metal Oxide Varistors SIOV", B5-P6202-X-X-7400

Metal Oxide Varistors

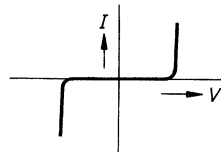
Voltage-dependent resistor

Climatic category GKF (SIOV-S, SR, CN, CU)
as per DIN 40040 GLF (SIOV-B)
Response time < 25 ns (< 10 ns with
SMD varistors)
Electric strength 2,5 kV (exc. SIOV-CN ...)
Insulation resistance > 1 G Ω

Graphical
symbol



Symmetrical characteristic



VAR0016-I

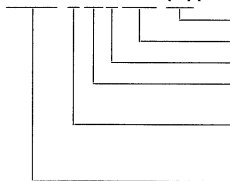
Approvals (all types $\geq$ K130; except CN, CU):
Underwriters Laboratories Inc. (UL-E77005 [M/N])
Canadian Standards Association (CSA-LR 63185)

Mounting instructions

Due to the unpredictable nature of transients a varistor may be overloaded, although it was carefully selected. Overload may result in package rupture and expulsion of hot material. For this reason the varistor should be physically shielded from adjacent components, e.g. by a suitable metal case. The varistor can be additionally protected by a thermal fuse which is connected to the varistor body.

Designation system:

SIOV-S14K250 (G)(AUTO)



Taped

Max. permissible operating voltage V_{rms}

Tolerance (at 1 mA): K $\pm$ 10 %, L $\pm$ 15 %, M $\pm$ 20 %

Rated diameter of varistor element in mm, for SIOV-CU, -CN and

-SR: length $\times$ width in $1/100$ inch

Design (S - round disk; SR - rectangular disk; B - block;

CN - chip without encapsulation; CU - encapsulated chip)

Siemens Metal Oxide Varistor

Siemens Zinc Oxide Varistor

Varistor $\hat{=}$ Variable Resistor

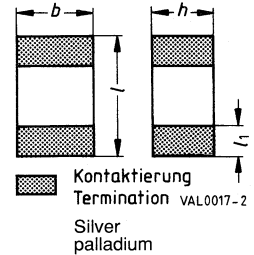
SHCV = Siemens High Capacitive Varistor ("Hicap varistor")

Combination of a multilayer ceramic capacitor and a
multilayer varistor

**AUTO = High energy absorption,
high resistance to thermal shock**

Chip varistors

Dimensions in mm	SIOV-CN1210 ...	SIOV-CN2220 ...
l	$3,2 \pm 0,2$	$5,7 \pm 0,2$
l_1	$0,5 \pm 0,25$	$0,5 \pm 0,25$
b	$2,5 \pm 0,2$	$4,8 \pm 0,2$
h	$0,75 \pm 0,15$ (M4) $1,1 \pm 0,2$ (M6, L8)	$1,1 \pm 0,2$
Taping	8-mm blister tape	12-mm blister tape



Type	Max. permissible operating voltage		Voltage at 1 mA $L \triangleq \pm 15\%$ $M \triangleq \pm 20\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	
SIOV-CN1210M4G	4	5,5	8	Q69530-V40-M62	50				
SIOV-CN1210M6G	6	8	11	Q69530-V60-M62	50				
SIOV-CN1210L8G	8	11	15	Q69530-V80-L62	50				

Type	Max. permissible operating voltage		Voltage at 1 mA $L \triangleq \pm 15\%$ $M \triangleq \pm 20\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	
SIOV-CN2220M4G	4	5,5	8	Q69540-V40-M62	50				
SIOV-CN2220M6G	6	8	11	Q69540-V60-M62	50				
SIOV-CN2220L8G	8	11	15	Q69540-V80-L62	50				

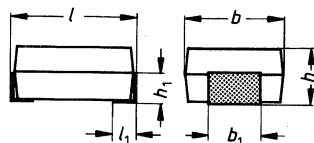
SIOV-CN for automotive applications upon request.

Storage of SIOV-CN with AgPd electrodes

The components should be used within 6 months, if possible. They are to be left in the original packing in order to avoid soldering problems caused by oxidized terminals.
Storage temperature < 40 °C; air humidity < 40 %.

Chip varistors, molded encapsulation

Dimensions in mm	SIOV-CU3225		Tolerance
	K11 ... K175	K230 ... K300	
<i>l</i>	8,0	8,0	± 0,3
<i>l</i> ₁	1,5	1,5	± 0,3
<i>b</i>	6,3	6,3	± 0,3
<i>b</i> ₁	3,0	3,0	± 0,3
<i>h</i>	3,2	4,5	± 0,3
<i>h</i> ₁	1,7	2,3	± 0,3
Taping	16-mm blister tape		



 Kontaktierung
Termination

Tinned
copper alloy

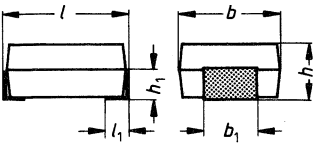
VAL0015 - K

Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10$	Ordering code	Min. qty.	Price each			
	<i>V</i> _{rms} (V)	<i>V</i> _{dc} (V)				Min. qty. +	100 +	500 +	
SIOV-CU3225K11G	11	14	18	Q69650-M110-K62	50				
SIOV-CU3225K14G	14	18	22	Q69650-M140-K62	50				
SIOV-CU3225K17G	17	22	27	Q69650-M170-K62	50				
SIOV-CU3225K20G	20	26	33	Q69650-M200-K62	50				
SIOV-CU3225K25G	25	31	39	Q69650-M250-K62	50				
SIOV-CU3225K30G	30	38	47	Q69650-M300-K62	50				
SIOV-CU3225K35G	35	45	56	Q69650-M350-K62	50				
SIOV-CU3225K40G	40	56	68	Q69650-M400-K62	50				
SIOV-CU3225K50G	50	65	82	Q69650-M500-K62	50				
SIOV-CU3225K60G	60	85	100	Q69650-M600-K62	50				
SIOV-CU3225K75G	75	100	120	Q69650-M750-K62	50				
SIOV-CU3225K95G	95	125	150	Q69650-M950-K62	50				
SIOV-CU3225K115G	115	150	180	Q69650-M111-K62	50				
SIOV-CU3225K130G	130	170	205	Q69650-M131-K62	50				
SIOV-CU3225K140G	140	180	220	Q69650-M141-K62	50				
SIOV-CU3225K150G	150	200	240	Q69650-M151-K62	50				
SIOV-CU3225K175G	175	225	270	Q69650-M171-K62	50				
SIOV-CU3225K230G	230	300	360	Q69650-M231-K62	50				
SIOV-CU3225K250G	250	320	390	Q69650-M251-K62	50				
SIOV-CU3225K275G	275	350	430	Q69650-M271-K62	50				
SIOV-CU3225K300G	300	385	470	Q69650-M301-K62	50				



Chip varistors, molded encapsulation

Dimensions in mm	SIOV-CU4032		Tolerance
	K11 ... K175	K230 ... K300	
<i>l</i>	10,0	10,0	± 0,3
<i>h</i> ₁	1,5	1,5	± 0,3
<i>b</i>	8,0	8,0	± 0,3
<i>b</i> ₁	3,0	3,0	± 0,3
<i>h</i>	3,2	4,5	± 0,3
<i>h</i> ₁	1,7	2,3	± 0,3
Taping	16-mm blister tape		

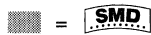


Kontaktierung
Termination

Tinned
copper alloy

VAL0015 - K

Type	Max. permissible operating voltage		Voltage at 1 mA $K \hat{=}$ ± 10%	Ordering code	Min. qty.	Price each			
	<i>V</i> _{rms} (V)	<i>V</i> _{dc} (V)	(V)			Min. qty. +	100 +	500 +	
SIOV-CU4032K11G	11	14	18	Q69660-M110-K62	50				
SIOV-CU4032K14G	14	18	22	Q69660-M140-K62	50				
SIOV-CU4032K17G	17	22	27	Q69660-M170-K62	50				
SIOV-CU4032K20G	20	26	33	Q69660-M200-K62	50				
SIOV-CU4032K25G	25	31	39	Q69660-M250-K62	50				
SIOV-CU4032K30G	30	38	47	Q69660-M300-K62	50				
SIOV-CU4032K35G	35	45	56	Q69660-M350-K62	50				
SIOV-CU4032K40G	40	56	68	Q69660-M400-K62	50				
SIOV-CU4032K50G	50	65	82	Q69660-M500-K62	50				
SIOV-CU4032K60G	60	85	100	Q69660-M600-K62	50				
SIOV-CU4032K75G	75	100	120	Q69660-M750-K62	50				
SIOV-CU4032K95G	95	125	150	Q69660-M950-K62	50				
SIOV-CU4032K115G	115	150	180	Q69660-M111-K62	50				
SIOV-CU4032K130G	130	170	205	Q69660-M131-K62	50				
SIOV-CU4032K140G	140	180	220	Q69660-M141-K62	50				
SIOV-CU4032K150G	150	200	240	Q69660-M151-K62	50				
SIOV-CU4032K175G	175	225	270	Q69660-M171-K62	50				
SIOV-CU4032K230G	230	300	360	Q69660-M231-K62	50				
SIOV-CU4032K250G	250	320	390	Q69660-M251-K62	50				
SIOV-CU4032K275G	275	350	430	Q69660-M271-K62	50				
SIOV-CU4032K300G	300	385	470	Q69660-M301-K62	50				

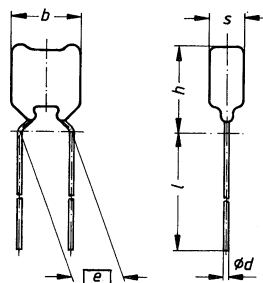


Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	e	b_{max}	s_{max}	d	l_{min}	h_{max}
SIOV-SR1210M4 ... L8	5	5	3,1	0,6	30	6,5
SIOV-SR2220M4 ... L8	5	7,5	3,8	0,6	30	9



Type	Max permissible operating voltage		Voltage at 1 mA $L \triangleq \pm 15\%$ $M \triangleq \pm 20\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	2500 +
SIOV-SR1210M4S	4	5,5	8	Q69535-R40-M	50				
SIOV-SR1210M6S	6	8	11	Q69535-R60-M	50				
SIOV-SR1210L8S	8	11	15	Q69535-R80-L	50				
SIOV-SR2220M4S	4	5,5	8	Q69545-R40-M	50				
SIOV-SR2220M6S	6	8	11	Q69545-R60-M	50				
SIOV-SR2220L8S	8	11	15	Q69545-R80-L	50				

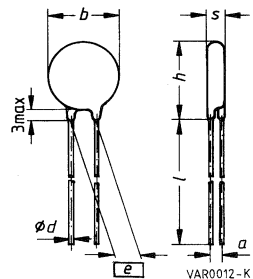
Taping: The type series SIOV-SR are also available taped to IEC specifications.

Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	$\bar{e}$	a	$b_{\max}$	$s_{\max}$	$h_{\max}$	$l_{\min}$	d
SIOV-S05K11 ... 40	5	1,2 ... 1,8	7	3,5 ... 4,1	10	30	0,6
SIOV-S05K50 ... 420	5	1,2 ... 4,3	7	3,5 ... 6,6	10	30	0,6



Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	2500 +
SIOV-S05K11	11	14	18	Q69X3445	50				
SIOV-S05K14	14	18	22	Q69X3422	50				
SIOV-S05K17	17	22	27	Q69X3423	50				
SIOV-S05K20	20	26	33	Q69X3424	50				
SIOV-S05K25	25	31	39	Q69X3425	50				
SIOV-S05K30	30	38	47	Q69X3426	50				
SIOV-S05K35	35	45	56	Q69X3427	50				
SIOV-S05K40	40	56	68	Q69X3428	50				
SIOV-S05K50	50	65	82	Q69X3429	50				
SIOV-S05K60	60	85	100	Q69X3025	50				
SIOV-S05K75	75	100	120	Q69X3026	50				
SIOV-S05K95	95	125	150	Q69X3027	50				
SIOV-S05K115	115	150	180	Q69X4318	50				
SIOV-S05K130	130	170	205	Q69X3028	50				
SIOV-S05K140	140	180	220	Q69X3029	50				
SIOV-S05K150	150	200	240	Q69X3030	50				
SIOV-S05K175	175	225	270	Q69X3031	50				
SIOV-S05K230	230	300	360	Q69X3032	50				
SIOV-S05K250	250	320	390	Q69X3033	50				
SIOV-S05K275	275	350	430	Q69X3034	50				
SIOV-S05K300	300	385	470	Q69X3035	50				
SIOV-S05K385	385	505	620	Q69X3700	50				
SIOV-S05K420	420	560	680	Q69X3703	50				

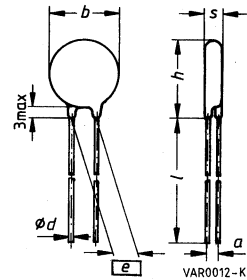
Taping: The type series SIOV-S05K11 ... K300 is also available taped to IEC specifications.

Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	e	a	b_{max}	s_{max}	h_{max}	l_{min}	d
SIOV-S07K11 ... 40	5	1,2 ... 1,8	9	3,5 ... 4,1	12	30	0,6
SIOV-S07K50 ... 420	5	1,2 ... 6,6	9	3,5 ... 6,6	12	30	0,6



Type	Max. permissible operating voltage		Voltage at 1 mA $K \geq \pm 10\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	2500 +
SIOV-S07K11	11	14	18	Q69X3446	50				
SIOV-S07K14	14	18	22	Q69X3447	50				
SIOV-S07K17	17	22	27	Q69X3448	50				
SIOV-S07K20	20	26	33	Q69X3449	50				
SIOV-S07K25	25	31	39	Q69X3450	50				
SIOV-S07K30	30	38	47	Q69X3451	50				
SIOV-S07K35	35	45	56	Q69X3452	50				
SIOV-S07K40	40	56	68	Q69X3453	50				
SIOV-S07K50	50	65	82	Q69X3454	50				
SIOV-S07K60	60	85	100	Q69X3036	50				
SIOV-S07K75	75	100	120	Q69X3037	50				
SIOV-S07K95	95	125	150	Q69X3038	50				
SIOV-S07K115	115	150	180	Q69X4319	50				
SIOV-S07K130	130	170	205	Q69X3039	50				
SIOV-S07K140	140	180	220	Q69X3040	50				
SIOV-S07K150	150	200	240	Q69X3041	50				
SIOV-S07K175	175	225	270	Q69X3042	50				
SIOV-S07K230	230	300	360	Q69X3043	50				
SIOV-S07K250	250	320	390	Q69X3044	50				
SIOV-S07K275	275	350	430	Q69X3045	50				
SIOV-S07K300	300	385	470	Q69X3046	50				
SIOV-S07K385	385	505	620	Q69X3825	50				
SIOV-S07K420	420	560	680	Q69X3826	50				

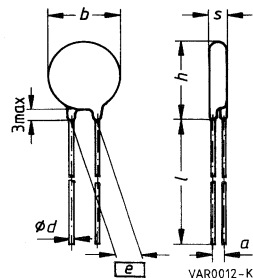
Taping: The type series SIOV-S07K11 ... K300 is also also available taped to IEC specifications.

Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	$\overline{e}$	a	$b_{\max}$	$s_{\max}$	$h_{\max}$	$l_{\min}$	d
SIOV-S10K11 ... 40	7,5	1,4 ... 2,1	12,5	4,1 ... 4,8	16	30	0,8
SIOV-S10K50 ... 175	7,5	1,4 ... 2,2	12,5	4,1 ... 4,9	16	30	0,8
SIOV-S10K230 ... 680	7,5	2,7 ... 7,0	12,5	5,4 ... 9,7	17	30	0,8



Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10\%$ (V)	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	2500 +
SIOV-S10K11	11	14	18	Q69X3455	50				
SIOV-S10K14	14	18	22	Q69X3011	50				
SIOV-S10K17	17	22	27	Q69X3012	50				
SIOV-S10K20	20	26	33	Q69X3013	50				
SIOV-S10K25	25	31	39	Q69X3014	50				
SIOV-S10K30	30	38	47	Q69X3015	50				
SIOV-S10K35	35	45	56	Q69X3016	50				
SIOV-S10K40	40	56	68	Q69X3017	50				
SIOV-S10K50	50	65	82	Q69X3047	50				
SIOV-S10K60	60	85	100	Q69X3048	50				
SIOV-S10K75	75	100	120	Q69X3049	50				
SIOV-S10K95	95	125	150	Q69X3050	50				
SIOV-S10K115	115	150	180	Q69X4320	50				
SIOV-S10K130	130	170	205	Q69X3119	50				
SIOV-S10K140	140	180	220	Q69X3120	50				
SIOV-S10K150	150	200	240	Q69X3121	50				
SIOV-S10K175	175	225	270	Q69X3122	50				
SIOV-S10K230	230	300	360	Q69X3123	50				
SIOV-S10K250	250	320	390	Q69X3124	50				
SIOV-S10K275	275	350	430	Q69X3125	50				
SIOV-S10K300	300	385	470	Q69X3126	50				
SIOV-S10K385	385	505	620	Q69X3127	50				
SIOV-S10K420	420	560	680	Q69X3128	50				
SIOV-S10K460	460	615	750	Q69X3129	50				
SIOV-S10K510	510	670	820	Q69X3131	50				
SIOV-S10K550	550	745	910	Q69X3132	50				
SIOV-S10K625	625	825	1000	Q69X3133	50				
SIOV-S10K680	680	895	1100	Q69X3134	50				

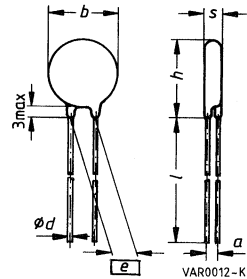
Taping: The type series SIOV-S10K11 ... K300 is also available taped to IEC specifications, with $\overline{e}$ = 7,5 or 5,0.

Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	e	a	b_{max}	s_{max}	h_{max}	l_{min}	d
SIOV-S14K11 ... 40	7,5	1,4 ... 2,2	16,5	4,1 ... 4,9	20	30	0,8
SIOV-S14K50 ... 175	7,5	1,4 ... 2,2	16,5	4,1 ... 4,9	20	30	0,8
SIOV-S14K230 ... 680	7,5	2,8 ... 7,1	16,5	5,5 ... 9,8	20,5	30	0,8
SIOV-S14K1000	7,5	11,2	16,5	13,9	20,5	30	0,8



Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)				Min. qty. +	100 +	500 +	2500 +
SIOV-S14K11	11	14	18	Q69X3456	25				
SIOV-S14K14	14	18	22	Q69X3018	25				
SIOV-S14K17	17	22	27	Q69X3019	25				
SIOV-S14K20	20	26	33	Q69X3020	25				
SIOV-S14K25	25	31	39	Q69X3021	25				
SIOV-S14K30	30	38	47	Q69X3022	25				
SIOV-S14K35	35	45	56	Q69X3023	25				
SIOV-S14K40	40	56	68	Q69X3024	25				
SIOV-S14K50	50	65	82	Q69X3135	25				
SIOV-S14K60	60	85	100	Q69X3136	25				
SIOV-S14K75	75	100	120	Q69X3137	25				
SIOV-S14K95	95	125	150	Q69X3138	25				
SIOV-S14K115	115	150	180	Q69X4321	25				
SIOV-S14K130	130	170	205	Q69X3139	25				
SIOV-S14K140	140	180	220	Q69X3140	25				
SIOV-S14K150	150	200	240	Q69X3141	25				
SIOV-S14K175	175	225	270	Q69X3142	25				
SIOV-S14K230	230	300	360	Q69X3143	25				
SIOV-S14K250	250	320	390	Q69X3144	25				
SIOV-S14K275	275	350	430	Q69X3145	25				
SIOV-S14K300	300	385	470	Q69X3146	25				
SIOV-S14K320	320	420	510	Q69X4327	25				
SIOV-S14K385	385	505	620	Q69X3147	25				
SIOV-S14K420	420	560	680	Q69X3148	25				
SIOV-S14K460	460	615	750	Q69X3149	25				
SIOV-S14K510	510	670	820	Q69X3219	25				
SIOV-S14K550	550	745	910	Q69X3220	25				
SIOV-S14K625	625	825	1000	Q69X3221	25				
SIOV-S14K680	680	895	1100	Q69X3222	25				
SIOV-S14K1000	1000	1465	1800	Q69X3223	25				

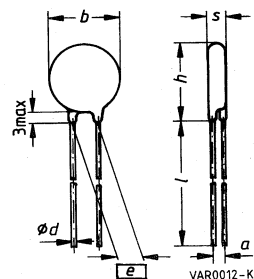
Taping: The type series SIOV-S14K11 ... K300 is also available taped to IEC specifications.

Metal Oxide Varistors

Disk varistors

Dimensions in mm

Type	e	a	b_{max}	s_{max}	h_{max}	l_{min}	d
SIOV-S20K11 ... 40	10	1,5 ... 2,4	22,5	4,5 ... 5,4	26	30	1,0
SIOV-S20K50 ... 175	10	1,5 ... 2,3	22,5	4,5 ... 5,3	26	30	1,0
SIOV-S20K230 ... 680	10	2,9 ... 7,3	22,5	5,9 ... 10,3	27,5	30	1,0
SIOV-S20K1000	10	11,5	22,5	14,5	27,5	30	1,0



Type	Max. permissible operating voltage		Voltage at 1 mA $K \geq \pm 10\%$	Ordering code	Min. qty.	Price each			
	$V_{rms}(V)$	$V_{dc}(V)$				Min. qty. +	100 +	500 +	2500 +
SIOV-S20K11	11	14	18	Q69X3457	25				
SIOV-S20K14	14	18	22	Q69X3458	25				
SIOV-S20K17	17	22	27	Q69X3459	25				
SIOV-S20K20	20	26	33	Q69X3460	25				
SIOV-S20K25	25	31	39	Q69X3461	25				
SIOV-S20K30	30	38	47	Q69X3462	25				
SIOV-S20K35	35	45	56	Q69X3463	25				
SIOV-S20K40	40	56	68	Q69X3464	25				
SIOV-S20K50	50	65	82	Q69X3465	25				
SIOV-S20K60	60	85	100	Q69X3224	25				
SIOV-S20K75	75	100	120	Q69X3225	25				
SIOV-S20K95	95	125	150	Q69X3226	25				
SIOV-S20K115	115	150	180	Q69X4322	25				
SIOV-S20K130	130	170	205	Q69X3227	25				
SIOV-S20K140	140	180	220	Q69X3228	25				
SIOV-S20K150	150	200	240	Q69X3229	25				
SIOV-S20K175	175	225	270	Q69X3230	25				
SIOV-S20K230	230	300	360	Q69X3231	25				
SIOV-S20K250	250	320	390	Q69X3232	25				
SIOV-S20K275	275	350	430	Q69X3233	25				
SIOV-S20K300	300	385	470	Q69X3234	25				
SIOV-S20K320	320	420	510	Q69X4328	25				

Taped upon request

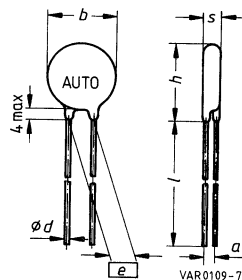
SIOV-S20K385	385	505	620	Q69X3235	25				
SIOV-S20K420	420	560	680	Q69X3236	25				
SIOV-S20K460	460	615	750	Q69X3237	25				
SIOV-S20K510	510	670	820	Q69X3239	25				
SIOV-S20K550	550	745	910	Q69X3240	25				
SIOV-S20K625	625	825	1000	Q69X3241	25				
SIOV-S20K680	680	895	1100	Q69X3242	25				
SIOV-S20K1000	1000	1465	1800	Q69X3243	25				

Metal Oxide Varistors

Automotive varistors

Dimensions in mm

Type	e	a	b_{max}	s_{max}	h_{max}	l_{min}	d
SIOV-S10K14 AUTO	7,5	1,5	13,5	5,2	17,5	30	0,8
SIOV-S10K17 AUTO	7,5	1,6	13,5	5,3	17,5	30	0,8
SIOV-S14K14 AUTO	7,5	1,5	19	5,3	23	30	0,8
SIOV-S14K17 AUTO	7,5	1,7	19	5,4	23	30	0,8
SIOV-S20K14 AUTO	10	1,6	25	5,6	29	30	1
SIOV-S20K17 AUTO	10	1,8	25	5,8	29	30	1
SIOV-S14K30 AUTO	7,5	2,0	19	5,8	23	30	0,8
SIOV-S20K30 AUTO	10	2,4	25	6,2	29	30	1



Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10\%$	Ordering code	Min. qty.	Price each			
	$V_{rms}(V)$	$V_{dc}(V)$	(V)			Min. qty. +	100 +	500 +	2500 +

12-V line

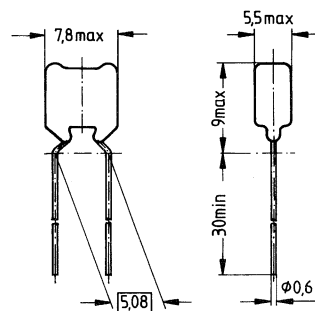
SIOV-S10K14 AUTO	14	16	22	Q69X3859	50				
SIOV-S10K17 AUTO	17	20	27	Q69X4570	50				
SIOV-S14K14 AUTO	14	16	22	Q69X4482	25				
SIOV-S14K17 AUTO	17	20	27	Q69X4325	25				
SIOV-S20K14 AUTO	14	16	22	Q69X3625	25				
SIOV-S20K17 AUTO	17	20	27	Q69X4569	25				

24-V line

SIOV-S14K30 AUTO	30	34	47	Q69X3889	25				
SIOV-S20K30 AUTO	30	34	47	Q69X3803	25				

Metal Oxide Varistors

Hicap varistors



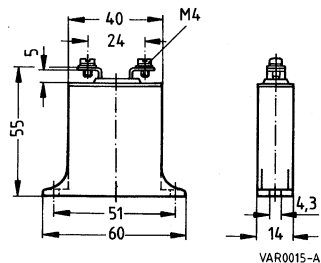
VAR0001-5

Dimensions in mm

Type	Max. permissible operating voltage		Capacitance $M \geq \pm 20 \%$ μF	Ordering code	Min. qty.	Price each			
	$V_{rms}(V)$	$V_{dc}(V)$				Min. qty. +	100 +	500 +	2500 +
SHCV-SR2K20M474X	20	26	0,47	Q69547-E3200-K	25				
SHCV-SR2K20M684X	20	26	0,68	Q69547-F3200-K	25				
SHCV-SR2K20M474Z	20	26	0,47	Q69548-E3200-K	25				
SHCV-SR2K20M684Z	20	26	0,68	Q69548-F3200-K	25				
SHCV-SR2K20M105Z	20	26	1,0	Q69548-G3200-K	25				
SHCV-SR2K20M155Z	20	26	1,5	Q69548-H3200-K	25				

Metal Oxide Varistors

Block varistors

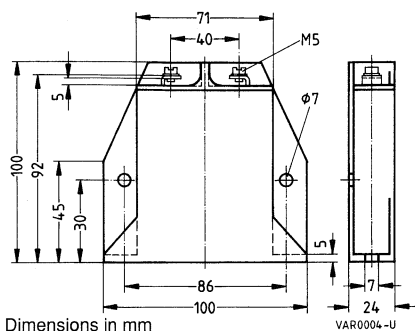


Dimensions in mm

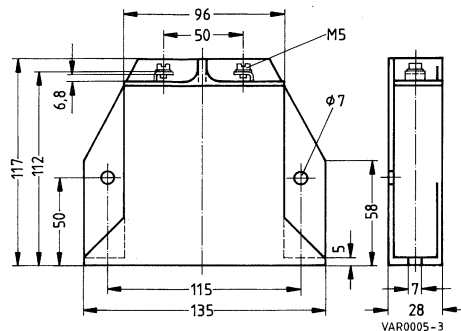
Type	Max. permissible operating voltage		Voltage at 1 mA $K \triangleq \pm 10\%$	Ordering code	Min. qty.	Price each			
	$V_{rms}(V)$	$V_{dc}(V)$	(V)			Min. qty. +			
SIOV-B25K75	75	100	120	Q69X3644	1				
SIOV-B25K130	130	170	205	Q69X3249	1				
SIOV-B25K250	250	320	390	Q69X3250	1				
SIOV-B25K420	420	560	680	Q69X3306	1				
SIOV-B32K75	75	100	120	Q69X3645	1				
SIOV-B32K130	130	170	205	Q69X3309	1				
SIOV-B32K150	150	200	240	Q69X3324	1				
SIOV-B32K230	230	300	360	Q69X3325	1				
SIOV-B32K250	250	320	390	Q69X3310	1				
SIOV-B32K275	275	350	430	Q69X3326	1				
SIOV-B32K320	320	420	510	Q69X4343	1				
SIOV-B32K385	385	505	620	Q69X3327	1				
SIOV-B32K420	420	560	680	Q69X3311	1				
SIOV-B32K460	460	615	750	Q69X3328	1				
SIOV-B32K550	550	745	910	Q69X3329	1				
SIOV-B32K680	680	895	1100	Q69X3822	1				
SIOV-B32K750	750	1060	1200	Q69X3632	1				
SIOV-B40K75	75	100	120	Q69X3633	1				
SIOV-B40K130	130	170	205	Q69X3634	1				
SIOV-B40K150	150	200	240	Q69X3635	1				
SIOV-B40K230	230	300	360	Q69X3636	1				
SIOV-B40K250	250	320	390	Q69X3637	1				
SIOV-B40K275	275	350	430	Q69X3638	1				
SIOV-B40K320	320	420	510	Q69X4344	1				
SIOV-B40K385	385	505	620	Q69X3639	1				
SIOV-B40K420	420	560	680	Q69X3640	1				
SIOV-B40K460	460	615	750	Q69X3641	1				
SIOV-B40K550	550	745	910	Q69X3642	1				
SIOV-B40K680	680	895	1100	Q69X3823	1				
SIOV-B40K750	750	1060	1200	Q69X3643	1				

Metal Oxide Varistors

Block varistors



SIOV-B60 ...



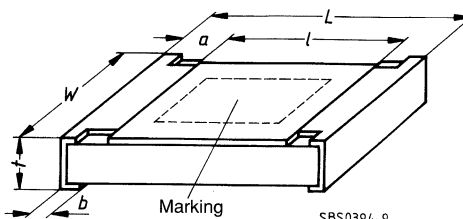
SIOV-B80 ...

Type	Max. permissible operating voltage		Voltage at 1 mA $K \pm 10\%$	Ordering code	Min. qty.	Price each			
	V_{rms} (V)	V_{dc} (V)	(V)			Min. qty. +			
SIOV-B60K75	75	100	120	Q69X3720	1				
SIOV-B60K130	130	170	205	Q69X3721	1				
SIOV-B60K150	150	200	240	Q69X3722	1				
SIOV-B60K230	230	300	360	Q69X3723	1				
SIOV-B60K250	250	320	390	Q69X3724	1				
SIOV-B60K275	275	350	430	Q69X3725	1				
SIOV-B60K320	320	420	510	Q69X4345	1				
SIOV-B60K385	385	505	620	Q69X3726	1				
SIOV-B60K420	420	560	680	Q69X3727	1				
SIOV-B60K460	460	615	750	Q69X3728	1				
SIOV-B60K550	550	745	910	Q69X3729	1				
SIOV-B60K680	680	895	1100	Q69X3824	1				
SIOV-B60K750	750	1060	1200	Q69X3730	1				
SIOV-B60K1000	1000	1465	1800	Q69X3731	1				
SIOV-B80K130	130	170	205	Q69X4346	1				
SIOV-B80K150	150	200	240	Q69X4347	1				
SIOV-B80K230	230	300	360	Q69X4348	1				
SIOV-B80K250	250	320	390	Q69X4349	1				
SIOV-B80K275	275	350	430	Q69X4350	1				
SIOV-B80K320	320	420	510	Q69X4351	1				
SIOV-B80K385	385	505	620	Q69X4352	1				
SIOV-B80K420	420	560	680	Q69X4353	1				
SIOV-B80K460	460	615	750	Q69X4354	1				
SIOV-B80K550	550	745	910	Q69X4355	1				
SIOV-B80K680	680	895	1100	Q69X4356	1				
SIOV-B80K750	750	1060	1200	Q69X4357	1				
SIOV-B80K1100	1100	1465	1800	Q69X4358	1				

Resistors

Contents	Size	Page
▼ Thick-film chip resistors »SMD«	0805 1206	218 219

Low temperature dependence
High reliability owing to protective coating on resistive element
Excellent solderability due to 3-layer termination
3-digit marking
Supply on 8-mm paper tape, 180-mm reel



	Size	
Temperature coefficient	0805	± 250 ppm/°C
	1206	± 200 ppm/°C
Max. voltage	0805	200 Vdc
	1206	400 Vdc

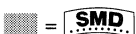
Dimensions (mm)

Size	L	W	l	a	b	t
0805	$2,00 \pm 0,20$	$1,25 \pm 0,10$	$1,20 \pm 0,20$	$0,40 \pm 0,25$	$0,40 \pm 0,25$	$0,60 \pm 0,10$
1206	$3,20 \begin{smallmatrix} +0,05 \\ -0,20 \end{smallmatrix}$	$1,60 \begin{smallmatrix} +0,05 \\ -0,15 \end{smallmatrix}$	$2,10 \pm 0,20$	$0,50 \pm 0,25$	$0,50 \pm 0,25$	$0,60 \pm 0,10$

Rated resistance	Rated power ($T_A = 70^\circ\text{C}$)	Ordering code	Min. qty.	Price per 100			
Ω				Min. qty. +	500 +	1000 +	

B54102 **Size 0805** **Resistance tolerance $\pm 5\%$**

▼ 0 (Jumper)	1/10 W	B54102-A1000-J60	250				
▼ 100		B54102-A1101-J60	250				
▼ 120		B54102-A1121-J60	250				
▼ 150		B54102-A1151-J60	250				
▼ 180		B54102-A1181-J60	250				
▼ 220		B54102-A1221-J60	250				
▼ 270		B54102-A1271-J60	250				
▼ 330		B54102-A1331-J60	250				
▼ 390		B54102-A1391-J60	250				
▼ 470		B54102-A1471-J60	250				
▼ 560		B54102-A1561-J60	250				
▼ 680		B54102-A1681-J60	250				
▼ 820		B54102-A1821-J60	250				
▼ 1,0 k		B54102-A1102-J60	250				
▼ 1,2 k		B54102-A1122-J60	250				
▼ 1,5 k		B54102-A1152-J60	250				
▼ 1,8 k		B54102-A1182-J60	250				
▼ 2,2 k		B54102-A1222-J60	250				
▼ 2,7 k		B54102-A1272-J60	250				
▼ 3,3 k		B54102-A1332-J60	250				
▼ 3,9 k		B54102-A1392-J60	250				
▼ 4,7 k		B54102-A1472-J60	250				
▼ 5,6 k		B54102-A1562-J60	250				
▼ 6,8 k		B54102-A1682-J60	250				
▼ 8,2 k		B54102-A1822-J60	250				

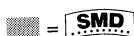


Thick-Film Chip Resistors



Rated resistance Ω	Rated power ($T_A = 70^\circ\text{C}$)	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	500 +	1000 +		
B54102			Size 0805		Resistance tolerance $\pm 5\%$			
▼ 10 k	1/10 W	B54102-A1103-J60	250					
▼ 12 k		B54102-A1123-J60	250					
▼ 15 k		B54102-A1153-J60	250					
▼ 18 k		B54102-A1183-J60	250					
▼ 22 k		B54102-A1223-J60	250					
▼ 27 k		B54102-A1273-J60	250					
▼ 33 k		B54102-A1333-J60	250					
▼ 39 k		B54102-A1393-J60	250					
▼ 47 k		B54102-A1473-J60	250					
▼ 56 k		B54102-A1563-J60	250					
▼ 68 k		B54102-A1683-J60	250					
▼ 82 k		B54102-A1823-J60	250					
▼ 100 k		B54102-A1104-J60	250					
B54103			Size 1206		Resistance tolerance $\pm 5\%$			
▼ 0 (Jumper)	1/8 W	B54103-A1000-X60	250					
▼ 100		B54103-A1101-J60	250					
▼ 120		B54103-A1121-J60	250					
▼ 150		B54103-A1151-J60	250					
▼ 180		B54103-A1181-J60	250					
▼ 220		B54103-A1221-J60	250					
▼ 270		B54103-A1271-J60	250					
▼ 330		B54103-A1331-J60	250					
▼ 390		B54103-A1391-J60	250					
▼ 470		B54103-A1471-J60	250					
▼ 560		B54103-A1561-J60	250					
▼ 680		B54103-A1681-J60	250					
▼ 820		B54103-A1821-J60	250					
▼ 1.0 k		B54103-A1102-J60	250					
▼ 1.2 k		B54103-A1122-J60	250					
▼ 1.5 k		B54103-A1152-J60	250					
▼ 1.8 k		B54103-A1182-J60	250					
▼ 2.2 k		B54103-A1222-J60	250					
▼ 2.7 k		B54103-A1272-J60	250					
▼ 3.3 k		B54103-A1332-J60	250					
▼ 3.9 k		B54103-A1392-J60	250					
▼ 4.7 k		B54103-A1472-J60	250					
▼ 5.6 k		B54103-A1562-J60	250					
▼ 6.8 k		B54103-A1682-J60	250					
▼ 8.2 k		B54103-A1822-J60	250					
▼ 10 k		B54103-A1103-J60	250					
▼ 12 k		B54103-A1123-J60	250					
▼ 15 k		B54103-A1153-J60	250					
▼ 18 k		B54103-A1183-J60	250					
▼ 22 k		B54103-A1223-J60	250					
▼ 27 k		B54103-A1273-J60	250					
▼ 33 k		B54103-A1333-J60	250					
▼ 39 k		B54103-A1393-J60	250					

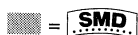
cont'd on page 220



Thick-Film Chip Resistors



Rated resistance	Rated power (T _A = 70 °C)	Ordering code	Min. qty.	Price per 100				
Ω				Min. qty. +	500 +	1000 +		
B54103			Size 1206		Resistance tolerance ± 5 %			
▼ 47 k	1/8 W	B54103-A1473-J60	250					
▼ 56 k		B54103-A1563-J60	250					
▼ 68 k		B54103-A1683-J60	250					
▼ 82 k		B54103-A1823-J60	250					
▼ 100 k		B54103-A1104-J60	250					



Capacitors

Product Group Index	Page
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Film/foil capacitors	241
Metallized film capacitors	259
Aluminum electrolytic capacitors	277
Tanatalum electrolytic capacitors	305
Capacitors for power electronics	313

Ceramic Capacitors

Contents	V _R	Type	Page
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Outline drawings			225
C0G	63 Vdc	B37871 ... B37949	228
X7R	63 Vdc	B37872 ... B37956	230
Z5U	63 Vdc	B37873 ... B37957	
Radial-lead multilayer capacitors			231
Outline drawings			232
C0G	63 Vdc	B37900 ... B37986	234
	100 Vdc	B37900 ... B37986	236
X7R	63 Vdc	B37901 ... B37987	237
	100 Vdc	B37901 ... B37987	239
Z5U	63 Vdc	B37902 ... B37988	
SIBATIT-VS capacitors	63 Vdc	B37448, B37449	240

▼ Newly included in this edition

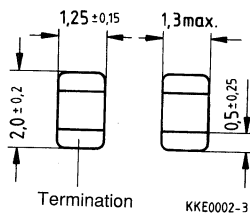
Extended capacitance range of multilayer chip capacitors			
C0G, sizes 0805 ... 1210		B37871 ... B37949	225
X7R, sizes 1210 ... 2220		B37950 ... B37956	229

Further technical literature

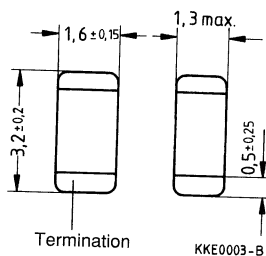
Data Book "Ceramic Capacitors", B4-B3568-X-X-7600
Short Form Catalog "Ceramic Capacitors", B5-P6303-X-X-7400

Chip capacitors

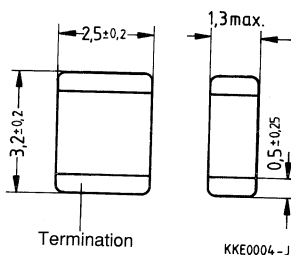
**Outline drawing 1
Size 0805**



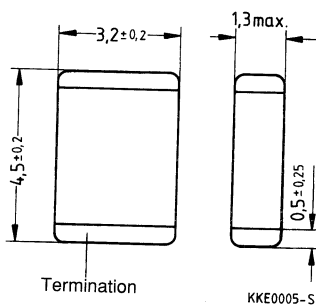
**Outline drawing 2
Size 1206**



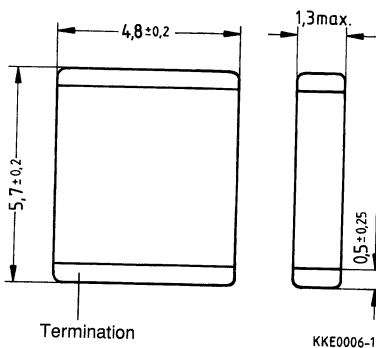
**Outline drawing 3
Size 1210**



**Outline drawing 4
Size 1812**



**Outline drawing 5
Size 2220**



Dimensions in mm

Chip capacitors (C0G)**Silver-nickel-tin terminations**

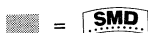
Tape packaging in acc. with IEC 286-3, 8-mm blister tape

Ceramic material	C0G
Rated voltage V_R	63 Vdc
IEC climatic category	55/125/56
Temperature coefficient (tolerance)	$\pm 30 \cdot 10^{-6}/K$
Dissipation factor $\tan \delta$	$< 1,0 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	$> 10^5 M\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	$> 1000 s$

C _R	Outline drawing (see p. 224)	Ordering code	Min. qty. +	Price per 100			
				Min. qty. +	250 +	500 +	1000 +
pF							
B37940; $V_R = 63 Vdc$			Size 0805		Capacitance tolerance $\pm 5 \%$		
1,0 ¹⁾	1	B37940-K5010-C62	100				
1,2 ¹⁾		B37940-K5010-C262	100				
1,5 ¹⁾		B37940-K5010-C562	100				
1,8 ¹⁾		B37940-K5010-C862	100				
2,2 ¹⁾		B37940-K5020-C262	100				
2,7 ¹⁾		B37940-K5020-C762	100				
3,3 ¹⁾		B37940-K5030-C362	100				
3,9 ¹⁾		B37940-K5030-C962	100				
4,7 ¹⁾		B37940-K5040-C762	100				
5,6 ¹⁾		B37940-K5050-C662	100				
6,8 ¹⁾		B37940-K5060-C862	100				
8,2 ¹⁾		B37940-K5080-C262	100				
10		B37940-K5100-J62	100				
12		B37940-K5120-J62	100				
15		B37940-K5150-J62	100				
18		B37940-K5180-J62	100				
22		B37940-K5220-J62	100				
27		B37940-K5270-J62	100				
33		B37940-K5330-J62	100				
39		B37940-K5390-J62	100				
47		B37940-K5470-J62	100				
56		B37940-K5560-J62	100				
68		B37940-K5680-J62	100				
82		B37940-K5820-J62	100				
100		B37940-K5101-J62	100				
120		B37940-K5121-J62	100				
150		B37940-K5151-J62	100				
180		B37940-K5181-J62	100				
220		B37940-K5221-J62	100				
270		B37940-K5271-J62	100				
330		B37940-K5331-J62	100				
▼ 390		B37940-K5391-J62	100				
▼ 470		B37940-K5471-J62	100				

¹⁾ Capacitance tolerance $\pm 0,25 pF$

cont'd on page 226



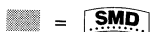


Chip capacitors (C0G)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
pF	(see p. 224)			Min. qty. +	250 +	500 +	1000 +
B37940; $V_R = 63$ Vdc		Size 0805	Capacitance tolerance $\pm 5\%$				
▼ 560	1	B37940-K5561-J62	100				
▼ 680		B37940-K5681-J62	100				
▼ 820		B37940-K5821-J62	100				
▼ 1,0 nF		B37940-K5102-J62	100				

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
pF	(see p. 224)			Min. qty. +	250 +	500 +	1000 +
B37871; $V_R = 63$ Vdc		Size 1206	Capacitance tolerance $\pm 5\%$				
1,0 ¹⁾	2	B37871-K5010-C62	100				
1,2 ¹⁾		B37871-K5010-C262	100				
1,5 ¹⁾		B37871-K5010-C562	100				
1,8 ¹⁾		B37871-K5010-C862	100				
2,2 ¹⁾		B37871-K5020-C262	100				
2,7 ¹⁾		B37871-K5020-C762	100				
3,3 ¹⁾		B37871-K5030-C362	100				
3,9 ¹⁾		B37871-K5030-C962	100				
4,7 ¹⁾		B37871-K5040-C762	100				
5,6 ¹⁾		B37871-K5050-C662	100				
6,8 ¹⁾		B37871-K5060-C862	100				
8,2 ¹⁾		B37871-K5080-C262	100				
10		B37871-K5100-J62	100				
12		B37871-K5120-J62	100				
15		B37871-K5150-J62	100				
18		B37871-K5180-J62	100				
22		B37871-K5220-J62	100				
27		B37871-K5270-J62	100				
33		B37871-K5330-J62	100				
39		B37871-K5390-J62	100				
47		B37871-K5470-J62	100				
56		B37871-K5560-J62	100				
68		B37871-K5680-J62	100				
82		B37871-K5820-J62	100				
100		B37871-K5101-J62	100				
120		B37871-K5121-J62	100				
150		B37871-K5151-J62	100				
180		B37871-K5181-J62	100				
220		B37871-K5221-J62	100				
270		B37871-K5271-J62	100				
330		B37871-K5331-J62	100				

¹⁾ Capacitance tolerance $\pm 0,25$ pF



Chip capacitors (C0G)

Chip capacitors (C0G)								
CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	100 +	250 +	500 +	1000 +
nF	(see p. 224)							
B37871; V _R = 63 Vdc			Size 1206	Capacitance tolerance ± 5 %				
390 pF	2	B37871-K5391-J62	100					
470 pF		B37871-K5471-J62	100					
560 pF		B37871-K5561-J62	100					
680 pF		B37871-K5681-J62	100					
820 pF		B37871-K5821-J62	100					
1.0		B37871-K5102-J62	100					
▼ 1.2		B37871-K5122-J62	100					
▼ 1.5		B37871-K5152-J62	100					
▼ 1.8		B37871-K5182-J62	100					
▼ 2.2		B37871-K5222-J62	100					
B37949; V _R = 63 Vdc			Size 1210	Capacitance tolerance ± 5 %				
▼ 1.0	3	B37949-K5102-J62	100					
1.2		B37949-K5122-J62	100					
1.5		B37949-K5152-J62	100					
1.8		B37949-K5182-J62	100					
2.2		B37949-K5222-J62	100					
2.7		B37949-K5272-J62	50					
3.3		B37949-K5332-J62	50					
▼ 3.9		B37949-K5392-J62	50					
▼ 4.7		B37949-K5472-J62	50					

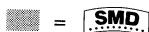
Chip capacitors (X7R)

Silver-nickel-tin terminations

Tape packaging in acc. with IEC 286-3; up to size 1210 in 8-mm blister tape, sizes 1812 and 2220 in 12-mm blister tape

Ceramic material	X7R
Rated voltage V_R	63 Vdc
IEC climatic category	55/125/56
Max. rel. capacitance change $\Delta C/C_{25}$	$\pm 15\%$
Dissipation factor $\tan \delta$	$< 25 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	$> 10^5 \text{ M}\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	$> 1000 \text{ s}$

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
nF	(see p. 224)			Min. qty. +	250 +	500 +	1000 +
B37941; V _R = 63 Vdc			Size 0805		Capacitance tolerance ± 10 %		
1.0	1	B37941-K5102-K62	100				
1.5		B37941-K5152-K62	100				
2.2		B37941-K5222-K62	100				
3.3		B37941-K5332-K62	100				
4.7		B37941-K5472-K62	100				
6.8		B37941-K5682-K62	100				
10		B37941-K5103-K62	100				
15		B37941-K5153-K62	100				
22		B37941-K5223-K62	100				
33		B37941-K5333-K62	100				
B37872; V _R = 63 Vdc			Size 1206		Capacitance tolerance ± 10 %		
1.0	2	B37872-K5102-K62	100				
1.5		B37872-K5152-K62	100				
2.2		B37872-K5222-K62	100				
3.3		B37872-K5332-K62	100				
4.7		B37872-K5472-K62	100				
6.8		B37872-K5682-K62	100				
10		B37872-K5103-K62	100				
15		B37872-K5153-K62	100				
22		B37872-K5223-K62	100				
33		B37872-K5333-K62	100				
47		B37872-K5473-K62	100				
68		B37872-K5683-K62	100				
100		B37872-K5104-K62	100				



Chip capacitors (X7R)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	250 +	500 +	1000 +
nF	(see p. 224)						
B37950; $V_R = 63$ Vdc		Size 1210	Capacitance tolerance $\pm 10\%$				
22	3	B37950-K5223-K62	100				
33		B37950-K5333-K62	100				
47		B37950-K5473-K62	100				
68		B37950-K5683-K62	100				
100		B37950-K5104-K62	100				
150		B37950-K5154-K62	100				
220		B37950-K5224-K62	100				

CR	Outline drawing (see p. 224)	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
nF								
B37953; V _R = 63 Vdc		Size 1812	Capacitance tolerance ± 10 %					
100	4	B37953-K5104-K62	50					
150		B37953-K5154-K62	50					
220		B37953-K5224-K62	25					
330		B37953-K5334-K62	25					
B37956; V _R = 63 Vdc		Size 2220	Capacitance tolerance ± 10 %					
220	5	B37956-K5224-K62	10					
330		B37956-K5334-K62	10					
470		B37956-K5474-K62	10					
680		B37956-K5684-K62	10					

Chip capacitors (Z5U)

Silver-nickel-tin terminations

Tape packaging in acc. with IEC 286-3; up to size 1210 in 8-mm blister tape, sizes 1812 and 2220 in 12-mm blister tape

Ceramic material	Z5U
Rated voltage V_R	63 Vdc
IEC climatic category	25/085/56
Max. rel. capacitance change $\Delta C/C_{25}$	+ 22/-56 %
Dissipation factor $\tan \delta$	< $30 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	> $10^4 M\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	> 500 s

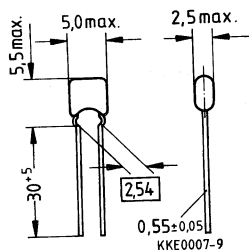
C _R	Outline drawing	Ordering code	Min. qty.	Price per 100				
nF	(see p. 224)			Min. qty. +	250 +	500 +	1000 +	
B37942; V _R = 63 Vdc		Size 0805		Capacitance tolerance ± 20 %				
10	1	B37942-K5103-M62	100					
22		B37942-K5223-M62	100					
47		B37942-K5473-M62	100					
B37873; V _R = 63 Vdc		Size 1206		Capacitance tolerance ± 20 %				
10	2	B37873-K5103-M62	100					
22		B37873-K5223-M62	100					
47		B37873-K5473-M62	100					
100		B37873-K5104-M62	100					
B37951; V _R = 63 Vdc		Size 1210		Capacitance tolerance ± 20 %				
100	3	B37951-K5104-M62	100					
220		B37951-K5224-M62	100					

C_R	Outline drawing	Ordering code	Min. qty.	Price per 100				
nF	(see p. 224)			Min. qty. +	50 +	100 +	250 +	500 +
B37954; $V_R = 63$ Vdc		Size 1812		Capacitance tolerance ± 20 %				
220	4	B37954-K5224-M62	100					
470		B37954-K5474-M62	50					
B37957; $V_R = 63$ Vdc		Size 2220		Capacitance tolerance ± 20 %				
470	5	B37957-K5474-M62	25					
1,0 μF		B37957-K5105-M62	20					

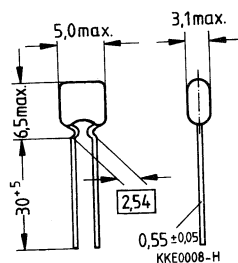
Multilayer Ceramic Capacitors Outline Drawings

Radial-lead capacitors

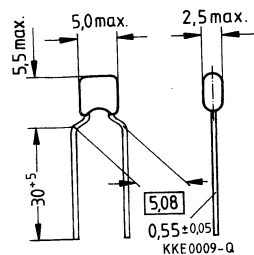
Outline drawing 6



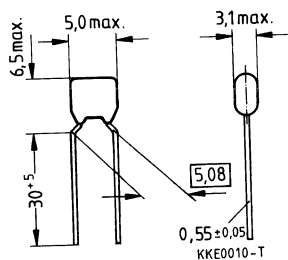
Outline drawing 7



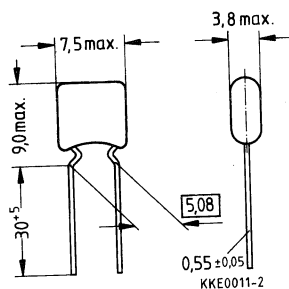
Outline drawing 8



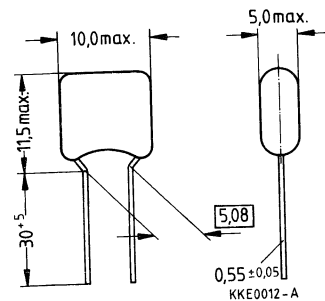
Outline drawing 9



Outline drawing 10



Outline drawing 11



Dimensions in mm

Multilayer Ceramic Capacitors

Radial-lead capacitors (C0G) Plastic encapsulation Tinned copper leads

Ceramic material	C0G
Rated voltage V_R	63 Vdc; 100 Vdc
IEC climatic category	55/125/56
Temperature coefficient (tolerance)	$\pm 30 \cdot 10^{-6}/K$
Dissipation factor $\tan \delta$	$< 1,0 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	$> 10^5 M\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	$> 1000 s$

C _R pF	Outline drawing (see p. 231)	Ordering code	Min. qty.	Price per 100					
				Min. qty. +	100 +	250 +	500 +	1000 +	
B37979; V _R = 63 Vdc									
Lead spacing [e] = 2,54 mm			Capacitance tolerance ± 5 %						
100	6	B37979-N5101-J	100						
120		B37979-N5121-J	100						
150		B37979-N5151-J	100						
180		B37979-N5181-J	100						
220		B37979-N5221-J	100						
270		B37979-N5271-J	100						
330		B37979-N5331-J	100						
390		B37979-N5391-J	100						
470		B37979-N5471-J	100						
560		B37979-N5561-J	100						
B37986; V _R = 63 Vdc									
Lead spacing [e] = 2,54 mm			Capacitance tolerance ± 5 %						
680	7	B37986-N5681-J	100						
820		B37986-N5821-J	100						
1,0 nF		B37986-N5102-J	100						
1,2 nF		B37986-N5122-J	100						
1,5 nF		B37986-N5152-J	100						
1,8 nF		B37986-N5182-J	100						
2,2 nF		B37986-N5222-J	100						
2,7 nF		B37986-N5272-J	50						
3,3 nF		B37986-N5332-J	50						
3,9 nF		B37986-N5392-J	50						
4,7 nF			B37986-N5472-J	50					
B37979; V _R = 63 Vdc									
Lead spacing [e] = 5,08 mm			Capacitance tolerance ± 5 %						
100	8	B37979-G5101-J	100						
120		B37979-G5121-J	100						
150		B37979-G5151-J	100						
180		B37979-G5181-J	100						

Multilayer Ceramic Capacitors

Radial-lead capacitors (C0G)

Radial-lead capacitors (CUG)								
CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
pF	(see p. 231)			Min. qty. +	100 +	250 +	500 +	1000 +
B37979; V _R = 63 Vdc		Lead spacing $\boxed{e}$ = 5,08 mm		Capacitance tolerance ± 5 %				
220	8	B37979-G5221-J	100					
270		B37979-G5271-J	100					
330		B37979-G5331-J	100					
390		B37979-G5391-J	100					
470		B37979-G5471-J	100					
560		B37979-G5561-J	100					
B37986; V _R = 63 Vdc		Lead spacing $\boxed{e}$ = 5,08 mm		Capacitance tolerance ± 5 %				
680	9	B37986-G5681-J	100					
820		B37986-G5821-J	100					
1,0 nF		B37986-G5102-J	100					
1,2 nF		B37986-G5122-J	100					
1,5 nF		B37986-G5152-J	100					
1,8 nF		B37986-G5182-J	100					
2,2 nF		B37986-G5222-J	100					
2,7 nF		B37986-G5272-J	50					
3,3 nF		B37986-G5332-J	50					
3,9 nF		B37986-G5392-J	50					
4,7 nF		B37986-G5472-J	50					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
nF	(see p. 231)							
B37983; $V_R = 63$ Vdc				Lead spacing $\boxed{e} = 5,08$ mm		Capacitance tolerance $\pm 5\%$		
5,6	10	B37983-N5562-J	20					
6,8		B37983-N5682-J	20					
8,2		B37983-N5822-J	20					
10		B37983-N5103-J	20					
12		B37983-N5123-J	10					
15		B37983-N5153-J	10					
18		B37983-N5183-J	10					
22		B37983-N5223-J	10					
27		B37983-N5273-J	10					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	20 +	50 +	100 +	250 +
nF	(see p. 231)							
B37900; $V_R = 63$ Vdc				Lead spacing $\boxed{e} = 5,08$ mm		Capacitance tolerance $\pm 5\%$		
33	11	B37900-N5333-J	5					
39		B37900-N5393-J	5					
47		B37900-N5473-J	5					

cont'd on page 234

Multilayer Ceramic Capacitors

Radial-lead capacitors (C0G)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
pF	(see p. 231)			Min. qty. +	250 +	500 +	1000 +	
B37979; V _R = 100 Vdc								
			Lead spacing $\boxed{e}$ = 2,54 mm	Capacitance tolerance $\pm 5\%$				
4,7 ¹⁾	6	B37979-N1040-D700	100					
5,6 ¹⁾		B37979-N1050-D600	100					
6,8 ¹⁾		B37979-N1060-D800	100					
8,2 ¹⁾		B37979-N1080-D200	100					
10		B37979-N1100-J	100					
12		B37979-N1120-J	100					
15		B37979-N1150-J	100					
18		B37979-N1180-J	100					
22		B37979-N1220-J	100					
27		B37979-N1270-J	100					
33		B37979-N1330-J	100					
39		B37979-N1390-J	100					
47		B37979-N1470-J	100					
56		B37979-N1560-J	100					
68		B37979-N1680-J	100					
82		B37979-N1820-J	100					
100		B37979-N1101-J	100					
120		B37979-N1121-J	100					
150		B37979-N1151-J	100					
180	B37979-N1181-J	100						
B37986; V _R = 100 Vdc								
			Lead spacing $\boxed{e}$ = 2,54 mm	Capacitance tolerance $\pm 5\%$				
220	7	B37986-N1221-J	100					
270		B37986-N1271-J	100					
330		B37986-N1331-J	100					
390		B37986-N1391-J	100					
470		B37986-N1471-J	100					
560		B37986-N1561-J	100					
680		B37986-N1681-J	100					
820		B37986-N1821-J	100					
1,0 nF		B37986-N1102-J	100					
1,2 nF		B37986-N1122-J	100					
1,5 nF		B37986-N1152-J	100					
B37979; V _R = 100 Vdc								
			Lead spacing $\boxed{e}$ = 5,08 mm	Capacitance tolerance $\pm 5\%$				
4,7 ¹⁾	8	B37979-G1040-D700	100					
5,6 ¹⁾		B37979-G1050-D600	100					
6,8 ¹⁾		B37979-G1060-D800	100					
8,2 ¹⁾		B37979-G1080-D200	100					
10		B37979-G1100-J	100					
12		B37979-G1120-J	100					
15		B37979-G1150-J	100					
18		B37979-G1180-J	100					
22		B37979-G1220-J	100					
27		B37979-G1270-J	100					
33		B37979-G1330-J	100					
39		B37979-G1390-J	100					
47		B37979-G1470-J	100					

¹⁾ Capacitance tolerance = $\pm 5\%$

¹⁾ Capacitance tolerance $\pm 0,5$ pF

Multilayer Ceramic Capacitors

Radial-lead capacitors (C0G)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	250 +	500 +	1000 +
pF	(see p. 231)						
B37979; $V_R = 100$ Vdc		Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 5 %			
56	8	B37979-G1560-J	100				
68		B37979-G1680-J	100				
82		B37979-G1820-J	100				
100		B37979-G1101-J	100				
120		B37979-G1121-J	100				
150		B37979-G1151-J	100				
180		B37979-G1181-J	100				

B37986; $V_R = 100$ Vdc		Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 5 %			
220	9	B37986-G1221-J	100				
270		B37986-G1271-J	100				
330		B37986-G1331-J	100				
390		B37986-G1391-J	100				
470		B37986-G1471-J	100				
560		B37986-G1561-J	100				
680		B37986-G1681-J	100				
820		B37986-G1821-J	100				
1,0 nF		B37986-G1102-J	100				
1,2 nF		B37986-G1122-J	100				
1,5 nF		B37986-G1152-J	100				

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
nF	(see p. 231)							
B37983; $V_R = 100$ Vdc		Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 5 %				
1,8	10	B37983-N1182-J	25					
2,2		B37983-N1222-J	25					
2,7		B37983-N1272-J	25					
3,3		B37983-N1332-J	25					
3,9		B37983-N1392-J	25					
4,7		B37983-N1472-J	25					
5,6		B37983-N1562-J	20					
6,8		B37983-N1682-J	20					
8,2		B37983-N1822-J	10					
10		B37983-N1103-J	10					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	20 +	50 +	100 +
nF	(see p. 231)						
B37900; $V_R = 100$ Vdc		Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 5 %			
12	11	B37900-N1123-J	5				
15		B37900-N1153-J	5				
18		B37900-N1183-J	5				
22		B37900-N1223-J	5				

Multilayer Ceramic Capacitors

Radial-lead capacitors (X7R)

Plastic encapsulation

Tinned copper leads

Ceramic material	X7R
Rated voltage V_R	63 Vdc; 100 Vdc
IEC climatic category	55/125/56
Max. rel. capacitance change $\Delta C/C_{25}$	$\pm 15\%$
Dissipation factor $\tan \delta$	$< 25 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	$> 10^5 \text{ M}\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	$> 1000 \text{ s}$

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
nF	(see p. 231)			Min. qty. +	250 +	500 +	1000 +
B37981; V _R = 63 Vdc							
Lead spacing [e] = 2,54 mm			Capacitance tolerance ± 10 %				
3,3	6	B37981-M5332-K	100				
4,7		B37981-M5472-K	100				
6,8		B37981-M5682-K	100				
10		B37981-M5103-K	100				
15		B37981-M5153-K	100				
22		B37981-M5223-K	100				
B37987; V _R = 63 Vdc							
Lead spacing [e] = 2,54 mm			Capacitance tolerance ± 10 %				
33	7	B37987-M5333-K	100				
47		B37987-M5473-K	100				
68		B37987-M5683-K	100				
100		B37987-M5104-K	100				
150		B37987-M5154-K	100				
B37981; V _R = 63 Vdc							
Lead spacing [e] = 5,08 mm			Capacitance tolerance ± 10 %				
3,3	8	B37981-F5332-K	100				
4,7		B37981-F5472-K	100				
6,8		B37981-F5682-K	100				
10		B37981-F5103-K	100				
15		B37981-F5153-K	100				
22		B37981-F5223-K	100				
B37987; V _R = 63 Vdc							
Lead spacing [e] = 5,08 mm			Capacitance tolerance ± 10 %				
33	9	B37987-F5333-K	100				
47		B37987-F5473-K	100				
68		B37987-F5683-K	100				
100		B37987-F5104-K	100				
150		B37987-F5154-K	100				

Multilayer Ceramic Capacitors

Radial-lead capacitors (X7R)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
nF	(see p. 231)							
B37984; $V_R = 63$ Vdc				Lead spacing $\square e = 5,08$ mm		Capacitance tolerance ± 10 %		
220	10	B37984-M5224-K	25					
330		B37984-M5334-K	25					
470		B37984-M5474-K	10					
680		B37984-M5684-K	10					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	20 +	50 +	100 +	250 +
μ F	(see p. 231)							
B37901; $V_R = 63$ Vdc				Lead spacing $\square e = 5,08$ mm		Capacitance tolerance ± 10 %		
1,0	11	B37901-M5105-K	10					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	250 +	500 +	1000 +
nF	(see p. 231)						
B37981; V _R = 100 Vdc		Lead spacing $\boxed{e}$ = 2,54 mm		Capacitance tolerance $\pm 10\%$			
220 pF	6	B37981-M1221-K	100				
330 pF		B37981-M1331-K	100				
470 pF		B37981-M1471-K	100				
680 pF		B37981-M1681-K	100				
1,0		B37981-M1102-K	100				
1,5		B37981-M1152-K	100				
2,2		B37981-M1222-K	100				
3,3		B37981-M1332-K	100				
4,7		B37981-M1472-K	100				
B37987; V _R = 100 Vdc		Lead spacing $\boxed{e}$ = 2,54 mm		Capacitance tolerance $\pm 10\%$			
6,8	7	B37987-M1682-K	100				
10		B37987-M1103-K	100				
15		B37987-M1153-K	100				
22		B37987-M1223-K	100				
33		B37987-M1333-K	100				
47		B37987-M1473-K	100				
68		B37987-M1683-K	100				
100		B37987-M1104-K	100				

cont'd on page 238

Multilayer Ceramic Capacitors

Radial-lead capacitors (X7R)

CR	Outline drawing	Ordering code	Min. qty.	Price per 100			
nF	(see p. 231)		Min. qty. +	250 +	500 +	1000 +	
B37984; $V_R = 100$ Vdc							
Lead spacing $[e] = 5,08$ mm			Capacitance tolerance ± 10 %				
220 pF	8	B37981-F1221-K	100				
330 pF		B37981-F1331-K	100				
470 pF		B37981-F1471-K	100				
680 pF		B37981-F1681-K	100				
1,0		B37981-F1102-K	100				
1,5		B37981-F1152-K	100				
2,2		B37981-F1222-K	100				
3,3		B37981-F1332-K	100				
4,7		B37981-F1472-K	100				
B37987; $V_R = 100$ Vdc							
Lead spacing $[e] = 5,08$ mm			Capacitance tolerance ± 10 %				
6,8	9	B37987-F1682-K	100				
10		B37987-F1103-K	100				
15		B37987-F1153-K	100				
22		B37987-F1223-K	100				
33		B37987-F1333-K	100				
47		B37987-F1473-K	100				
68		B37987-F1683-K	100				
100		B37987-F1104-K	100				

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
nF	(see p. 231)							
B37984; $V_R = 100$ Vdc								
			Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 10 %			
150	10	B37984-M1154-K	25					

CR	Outline drawing	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	20 +	50 +	100 +	250 +
nF	(see p. 231)							
B37901; $V_R = 100$ Vdc								
			Lead spacing $[e] = 5,08$ mm		Capacitance tolerance ± 10 %			
220	11	B37901-M1224-K	20					
330		B37901-M1334-K	10					

Multilayer Ceramic Capacitors

Radial-lead capacitors (Z5U) Plastic encapsulation Tinned copper leads

Ceramic material	Z5U
Rated voltage V_R	63 Vdc
IEC climatic category	25/085/56
Max. rel. capacitance change $\Delta C/C_{25}$	+22/-56 %
Dissipation factor $\tan \delta$	< $30 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	> $10^4 M\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	> 500 s

C _R	Outline drawing (see p. 231)	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	250 +	500 +	1000 +
nF							
B37982; V _R = 63 Vdc		Lead spacing [e] = 2,54 mm		Capacitance tolerance ± 20 %			
10	6	B37982-N5103-M	100				
22		B37982-N5223-M	100				
47		B37982-N5473-M	100				
B37988; V _R = 63 Vdc		Lead spacing [e] = 2,54 mm		Capacitance tolerance ± 20 %			
100	7	B37988-N5104-M	100				
220		B37988-N5224-M	100				
B37982; V _R = 63 Vdc		Lead spacing [e] = 5,08 mm		Capacitance tolerance ± 20 %			
10	8	B37982-G5103-M	100				
22		B37982-G5223-M	100				
47		B37982-G5473-M	100				
B37988; V _R = 63 Vdc		Lead spacing [e] = 5,08 mm		Capacitance tolerance ± 20 %			
100	9	B37988-G5104-M	100				
220		B37988-G5224-M	100				

C _R	Outline drawing (see p. 231)	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	50 +	100 +	250 +	500 +
B37985; V _R = 63 Vdc		Lead spacing [e] = 5,08 mm		Capacitance tolerance ± 20 %				
470	10	B37985-N5474-M	25					
1,0 μF		B37985-N5105-M	20					

C_R μF	Outline drawing (see p. 231)	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	20 +	50 +	100 +	250 +
B37902; $V_R = 63$ Vdc				Lead spacing [e] = 5,08 mm		Capacitance tolerance ± 20 %		
2,2	11	B37902-N5225-M	10					

Ceramic Capacitors

SIBATIT-VS capacitors Plastic encapsulation Tinned copper leads

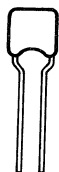
Ceramic material	2E3
Rated voltage V_R	63 Vdc
IEC climatic category	40/085/56
Max. rel. capacitance change $\Delta C/C_{20}$	+22/-56 %
Dissipation factor $\tan \delta$	$< 30 \cdot 10^{-3}$
Insulation resistance R_{is} (at 25 °C)	$> 10^4 \text{ M}\Omega$
Time constant τ ($C_R \cdot R_{is}$; at 25 °C)	$> 500 \text{ s}$

Outline
drawing 12



KKE0017-G

Outline
drawing 13



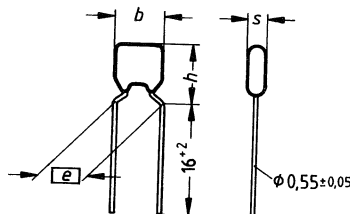
KKE0018-P

Outline
drawing 14



KKE0019-X

Outline
drawing 15



KKE0015-Z

Dimensions in mm

CR	Dimensions $b \times h \times s$ mm	Out- line draw- ing	Ordering code	Min. qty.	Price per 100			
					Min. qty. +	250 +	500 +	1000 +
nF								
B37448; $V_R = 63 \text{ Vdc}$					Capacitance tolerance + 50/- 20 %			
			Lead spacing $[e] = 2,54 \text{ mm}$					
10	5,0 × 5,5 × 2,5	12	B37448-G6103-S38	100				
22	5,0 × 6,5 × 3,1	13	B37448-G6223-S38	100				
33	5,0 × 6,5 × 3,1	13	B37448-G6333-S38	100				
47	5,0 × 6,5 × 3,1	13	B37448-G6473-S38	100				
68	5,0 × 6,5 × 3,1	13	B37448-G6683-S38	100				
100	5,0 × 6,5 × 3,1	13	B37448-G6104-S38	100				
B37449; $V_R = 63 \text{ Vdc}$					Capacitance tolerance + 50/- 20 %			
			Lead spacing $[e] = 5,08 \text{ mm}$					
10	5,0 × 5,5 × 2,5	14	B37449-G6103-S38	100				
22	5,0 × 6,5 × 3,1	15	B37449-G6223-S38	100				
33	5,0 × 6,5 × 3,1	15	B37449-G6333-S38	100				
47	5,0 × 6,5 × 3,1	15	B37449-G6473-S38	100				
68	5,0 × 6,5 × 3,1	15	B37449-G6683-S38	100				
100	5,0 × 6,5 × 3,1	15	B37449-G6104-S38	100				

Film/Foil Capacitors

Contents	Type	Page
STYROFLEX® capacitors (KS)		
with axial leads, taped	B31063	242
with axial leads, taped	B31861	244
in sealed plastic case	B31531	246
Polypropylene capacitors (KP)		
with axial leads, taped	B33063	249
single-ended, plug-in	B33061	253
in sealed plastic case	B33531	255

Further technical literature

Data Book "STYROFLEX Capacitors, Polypropylene Capacitors", B4-P2901-X-X-7600

STYROFLEX Capacitors (KS)

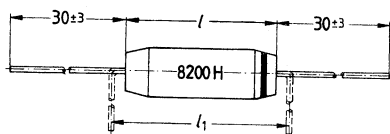
General-purpose grade capacitor

In accordance with DIN 44 126, part 1

Application: Resonant circuits, timing circuits, RF and IF filters

Tape packaging in acc. with IEC 286-1, AMMO pack

Rated dc voltage V_R	160 V
AC voltage V_{ac}	65 V
IEC climatic category	25/070/04
Dissipation factor $\tan \delta$	10 kHz $< (0,2 \dots 0,5) \cdot 10^{-3}$
	100 kHz $< (0,3 \dots 0,4) \cdot 10^{-3}$
Temperature coefficient α_C	$-(100 \dots 250) \cdot 10^{-6}/K$
(for $C_R \geq 100$ pF)	



Marking:
(black) Rated capacitance (pF)
 Tolerance (code letter)
 Rated voltage
Outer foil: (uncoded or color band)
 Bar or color band

Dimensions in mm

Length $l-1,5$	l_1 min	d_1
11,5	15,0	0,6
16,5	20,0	0,8
21,5	25,0	0,8

C_R	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100				
pF	mm			Min. qty. +	250 +	500 +	1000 +	2500 +
160 Vdc		Color band: red		Capacitance tolerance $\pm 2,5\%$				
47	4,5 × 11,5	B31063-B1470-H7	100					
56	4,5 × 11,5	B31063-B1560-H7	100					
68	4,5 × 11,5	B31063-B1680-H7	100					
82	4,5 × 11,5	B31063-B1820-H7	100					
100	4,5 × 11,5	B31063-B1101-H7	100					
120	4,5 × 11,5	B31063-B1121-H7	100					
150	4,5 × 11,5	B31063-B1151-H7	100					
180	4,5 × 11,5	B31063-B1181-H7	100					

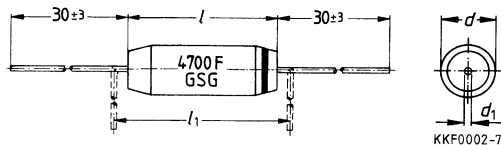
STYROFLEX Capacitors (KS)

C _R pF	Dimensions <i>d</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100				
	mm			Min. qty. +	250 +	500 +	1000 +	2500 +
160 Vdc		Color band: red	Capacitance tolerance ± 2,5 %					
220	4,5 × 11,5	B31063-B1221-H7	100					
270	4,5 × 11,5	B31063-B1271-H7	100					
330	4,5 × 11,5	B31063-B1331-H7	100					
390	4,5 × 11,5	B31063-B1391-H7	100					
470	4,5 × 11,5	B31063-B1471-H7	100					
560	4,5 × 11,5	B31063-B1561-H7	100					
680	4,5 × 11,5	B31063-B1681-H7	100					
820	4,7 × 11,5	B31063-B1821-H7	100					
1000	4,7 × 11,5	B31063-B1102-H7	100					
1200	5,2 × 11,5	B31063-B1122-H7	100					
1500	5,2 × 11,5	B31063-B1152-H7	100					
1800	5,8 × 11,5	B31063-B1182-H7	100					
2200	5,8 × 11,5	B31063-B1222-H7	100					
2700	6,7 × 11,5	B31063-B1272-H7	100					
3300	6,7 × 11,5	B31063-B1332-H7	100					
3900	7,6 × 11,5	B31063-B1392-H7	100					
4700	7,6 × 11,5	B31063-B1472-H7	100					
5600	6,9 × 16,5	B31063-B1562-H7	100					
6800	6,9 × 16,5	B31063-B1682-H7	100					
8200	8,0 × 16,5	B31063-B1822-H7	100					
10000	8,0 × 16,5	B31063-B1103-H7	100					
12000	8,8 × 21,5	B31063-B1123-H7	100					
15000	8,8 × 21,5	B31063-B1153-H7	100					
18000	10,2 × 21,5	B31063-B1183-H7	100					
22000	10,2 × 21,5	B31063-B1223-H7	100					
27000	11,2 × 21,5	B31063-B1273-H7	100					

STYROFLEX Capacitors (KS)

Long-life grade capacitor
In accordance with DIN 41 393
Application: Telecommunications, measuring systems,
RF and IF filters, timing circuits, resonant circuits
Tape packaging in acc. with IEC 286-1, AMMO pack

Operating time		$\geq 200\,000\text{ h}$
Failure rate		$\leq 10\text{ fit}$
Rated dc voltage V_R		160 V
AC voltage V_{ac}		65 V
IEC climatic category		40/070/21
Dissipation factor $\tan \delta$	10 kHz	$< (0,2 \dots 0,3) \cdot 10^{-3}$
	100 kHz	$< (0,3 \dots 0,4) \cdot 10^{-3}$
Temperature coefficient α_c (for $C_R \geq 100\text{ pF}$)		$- (100 \dots 250) \cdot 10^{-6}/K$



Marking:	Rated capacitance (pF)
(blue)	Tolerance (code letter)
	Rated voltage (uncoded or color band)
Outer foil:	Bar or color band

Dimensions in mm

Length $l_{-1,5}$	$l_1\text{ min}$	d_1
11,5	15,0	0,6
16,5	20,0	0,8
21,5	25,0	0,8
31,5	35,0	0,8

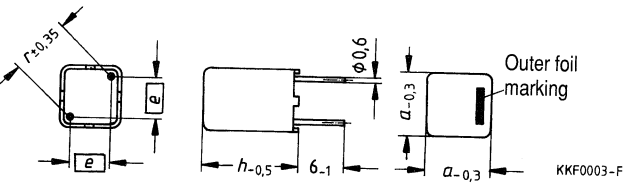
STYROFLEX Capacitors (KS)

CR	Dimensions $d_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price each				
				Min. qty.	100 +	250 +	500 +	1000 +
pF	mm							
160 Vdc		Color band: red		Capacitance tolerance $\pm 2\%$				
68	4,5 × 11,5	B31861-C1680-G7	50					
82	4,5 × 11,5	B31861-C1820-G7	50					
100	4,5 × 11,5	B31861-C1101-G7	50					
120	4,5 × 11,5	B31861-C1121-G7	50					
150	4,5 × 11,5	B31861-C1151-G7	50					
180	4,5 × 11,5	B31861-C1181-G7	50					
220	4,5 × 11,5	B31861-C1221-G7	50					
270	4,5 × 11,5	B31861-C1271-G7	50					
330	4,5 × 11,5	B31861-C1331-G7	50					
390	4,5 × 11,5	B31861-C1391-G7	50					
470	4,5 × 11,5	B31861-C1471-G7	50					
560	4,5 × 11,5	B31861-C1561-G7	50					
680	4,5 × 11,5	B31861-C1681-G7	50					
820	4,7 × 11,5	B31861-C1821-G7	50					
1000	4,7 × 11,5	B31861-C1102-G7	50					
1200	5,2 × 11,5	B31861-C1122-G7	50					
1500	5,2 × 11,5	B31861-C1152-G7	50					
1800	5,8 × 11,5	B31861-C1182-G7	50					
2200	5,8 × 11,5	B31861-C1222-G7	50					
2700	6,7 × 11,5	B31861-C1272-G7	50					
3300	6,7 × 11,5	B31861-C1332-G7	50					
3900	7,1 × 11,5	B31861-C1392-G7	50					
4700	7,6 × 11,5	B31861-C1472-G7	50					
5600	6,9 × 16,5	B31861-C1562-G7	50					
6800	6,9 × 16,5	B31861-C1682-G7	50					
8200	7,4 × 16,5	B31861-C1822-G7	50					
10000	8,0 × 16,5	B31861-C1103-G7	50					
12000	8,8 × 21,5	B31861-C1123-G7	50					
15000	8,8 × 21,5	B31861-C1153-G7	50					
18000	9,4 × 21,5	B31861-C1183-G7	50					
22000	10,2 × 21,5	B31861-C1223-G7	50					



Long-life grade capacitor
In accordance with DIN 44 127 (draft)
With quality approval as per CECC 30901-006
Application: Telecommunications, measuring systems
RF and IF filters, timing circuits, resonant circuits
 Plastic case, sealed, flame-retardant (UL 94 V-0)

Operating time		≥ 200 000 h
Failure rate		≤ 8 fit
Rated dc voltage V_R		63 V
AC voltage V_{ac}		25 V
IEC climatic category		40/085/21
Dissipation factor $\tan \delta$	10 kHz	$< (0,2 \dots 0,4) \cdot 10^{-3}$
	100 kHz	$< (0,3 \dots 0,6) \cdot 10^{-3}$
Temperature coefficient α_C		$-(60 \dots 180) \cdot 10^{-6}/K$
(for $C_R \geq 100$ pF)		



- Marking:
 (black)
- Manufacturer's logo
 Design code (KS)
 Rated capacitance (pF)
 Tolerance (code letter)
 Climatic category (code letters)
 Rated voltage (uncoded)
 Date of manufacture
- Outer foil:
- Bar

Dimensions in mm

C_R	Dimensions $a \times a \times h$	Ordering code	Min. qty.	Price each			
pF	mm			Min. qty. +	50 +	100 +	
63 Vdc							
Lead spacing $[e] = 5,08$ mm, $r = 7,2$ mm				Capacitance tolerance $\pm 1\%$			
100	$6,3 \times 6,3 \times 11$	B31531-B5101-F	20				
110	$6,3 \times 6,3 \times 11$	B31531-B5111-F	20				
120	$6,3 \times 6,3 \times 11$	B31531-B5121-F	20				
130	$6,3 \times 6,3 \times 11$	B31531-B5131-F	20				
150	$6,3 \times 6,3 \times 11$	B31531-B5151-F	20				
160	$6,3 \times 6,3 \times 11$	B31531-B5161-F	20				
180	$6,3 \times 6,3 \times 11$	B31531-B5181-F	20				
200	$6,3 \times 6,3 \times 11$	B31531-B5201-F	20				

CR	Dimensions $a \times a \times h$	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +		
pF	mm							
63 Vdc		Lead spacing $\square$ = 5,08 mm, $r = 7,2$ mm			Capacitance tolerance $\pm 1\%$			
220	$6,3 \times 6,3 \times 11$	B31531-B5221-F	20					
240	$6,3 \times 6,3 \times 11$	B31531-B5241-F	20					
270	$6,3 \times 6,3 \times 11$	B31531-B5271-F	20					
300	$6,3 \times 6,3 \times 11$	B31531-B5301-F	20					
330	$6,3 \times 6,3 \times 11$	B31531-B5331-F	20					
360	$6,3 \times 6,3 \times 11$	B31531-B5361-F	20					
390	$6,3 \times 6,3 \times 11$	B31531-B5391-F	20					
430	$6,3 \times 6,3 \times 11$	B31531-B5431-F	20					
470	$6,3 \times 6,3 \times 11$	B31531-B5471-F	20					
510	$6,3 \times 6,3 \times 11$	B31531-B5511-F	20					
560	$6,3 \times 6,3 \times 11$	B31531-B5561-F	20					
620	$6,3 \times 6,3 \times 11$	B31531-B5621-F	20					
680	$6,3 \times 6,3 \times 11$	B31531-B5681-F	20					
750	$6,3 \times 6,3 \times 11$	B31531-B5751-F	20					
820	$6,3 \times 6,3 \times 11$	B31531-B5821-F	20					
910	$6,3 \times 6,3 \times 11$	B31531-B5911-F	20					
1000	$6,3 \times 6,3 \times 11$	B31531-B5102-F	20					
1100	$6,3 \times 6,3 \times 11$	B31531-B5112-F	20					
1200	$6,3 \times 6,3 \times 11$	B31531-B5122-F	20					
1300	$6,3 \times 6,3 \times 11$	B31531-B5132-F	20					
1500	$6,3 \times 6,3 \times 11$	B31531-B5152-F	20					
1600	$6,3 \times 6,3 \times 11$	B31531-B5162-F	20					
1800	$6,3 \times 6,3 \times 11$	B31531-B5182-F	20					
2000	$6,3 \times 6,3 \times 11$	B31531-B5202-F	20					
2200	$6,3 \times 6,3 \times 11$	B31531-B5222-F	20					
2400	$6,3 \times 6,3 \times 11$	B31531-B5242-F	20					
2700	$6,3 \times 6,3 \times 11$	B31531-B5272-F	20					
3000	$6,3 \times 6,3 \times 11$	B31531-B5302-F	20					
3300	$6,3 \times 6,3 \times 11$	B31531-B5332-F	20					
3600	$6,3 \times 6,3 \times 11$	B31531-B5362-F	20					
3900	$6,3 \times 6,3 \times 11$	B31531-B5392-F	20					
4300	$6,3 \times 6,3 \times 11$	B31531-B5432-F	20					
4700	$6,3 \times 6,3 \times 11$	B31531-B5472-F	20					
5100	$6,3 \times 6,3 \times 11$	B31531-B5512-F	20					
5600	$6,3 \times 6,3 \times 11$	B31531-B5562-F	20					
6200	$6,3 \times 6,3 \times 11$	B31531-B5622-F	20					
6800	$6,3 \times 6,3 \times 11$	B31531-B5682-F	20					
7500	$6,3 \times 6,3 \times 11$	B31531-B5752-F	20					

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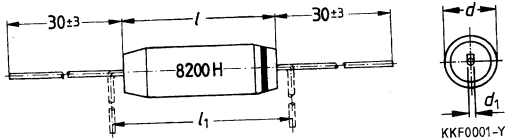
C _R pF	Dimensions <i>a</i> × <i>a</i> × <i>h</i>	Ordering code	Min. qty.	Price each				
	mm			Min. qty. +	50 +	100 +		
63 Vdc Lead spacing $\overline{e}$ = 5,08 mm, <i>r</i> = 7,2 mm Capacitance tolerance ± 1 %								
8200	7,5 × 7,5 × 13	B31531-B5822-F	20					
9100	7,5 × 7,5 × 13	B31531-B5912-F	20					
10000	7,5 × 7,5 × 13	B31531-B5103-F	20					
11000	7,5 × 7,5 × 13	B31531-B5113-F	20					
12000	7,5 × 7,5 × 13	B31531-B5123-F	20					
13000	7,5 × 7,5 × 13	B31531-B5133-F	20					
15000	7,5 × 7,5 × 13	B31531-B5153-F	20					
63 Vdc Lead spacing $\overline{e}$ = 7,62 mm, <i>r</i> = 10,75 mm Capacitance tolerance ± 1 %								
16000	10 × 10 × 13	B31531-B5163-F	20					
18000	10 × 10 × 13	B31531-B5183-F	20					
20000	10 × 10 × 13	B31531-B5203-F	20					
22000	10 × 10 × 13	B31531-B5223-F	20					
24000	10 × 10 × 13	B31531-B5243-F	20					
27000	10 × 10 × 13	B31531-B5273-F	20					
30000	10 × 10 × 13	B31531-B5303-F	20					
33000	10 × 10 × 13	B31531-B5333-F	20					
63 Vdc Lead spacing $\overline{e}$ = 10,16 mm, <i>r</i> = 14,35 mm Capacitance tolerance ± 1 %								
36000	12,5 × 12,5 × 13	B31531-B5363-F	20					
39000	12,5 × 12,5 × 13	B31531-B5393-F	20					
43000	12,5 × 12,5 × 13	B31531-B5433-F	20					
47000	12,5 × 12,5 × 13	B31531-B5473-F	20					
51000	12,5 × 12,5 × 13	B31531-B5513-F	20					
56000	12,5 × 12,5 × 13	B31531-B5563-F	20					

Polypropylene Capacitors (KP)

General-purpose grade capacitor
Application: RF and IF filters, timing circuits, resonant circuits
Tape packaging in acc. with IEC 286-1, AMMO pack

Rated dc voltage V_R		160 V	630 V
AC voltage V_{ac}		65 V	210 V
IEC climatic category		40/085/21	
Dissipation factor $\tan \delta$	10 kHz	$< (0,2 \dots 0,4) \cdot 10^{-3}$	
	100 kHz	$< (0,3 \dots 0,5) \cdot 10^{-3}$	
Temperature coefficient α		$-(100 \dots 300) \cdot 10^{-6}/K$	

(for $C_R \geq 100$ pF)



Marking: Rated capacitance (pF)
(red) Tolerance (code letter)
Rated voltage
(unencoded or color band)
Outer foil: Bar or color band

Dimensions in mm

Length $l-2$	l_1 min	d_1
11,0	15,0	0,6
16,5	20,0	0,8
21,5	25,0	0,8

C_R	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	250 +	500 +	1000 +	2500 +
pF	mm							
630 Vdc				Color band: black				
				Capacitance tolerance $\pm 2,5 \%$				
43	4,0 × 11	B33063-B6430-H7	100					
47	4,0 × 11	B33063-B6470-H7	100					
51	4,5 × 11	B33063-B6510-H7	100					
56	4,5 × 11	B33063-B6560-H7	100					
62	4,5 × 11	B33063-B6620-H7	100					
68	4,5 × 11	B33063-B6680-H7	100					
75	4,5 × 11	B33063-B6750-H7	100					
82	4,5 × 11	B33063-B6820-H7	100					
91	4,5 × 11	B33063-B6910-H7	100					

cont'd on page 250

Polypropylene Capacitors (KP)

CR	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100				
pF	mm			Min. qty. +	250 +	500 +	1000 +	2500 +
630 Vdc		Color band: black		Capacitance tolerance $\pm 2,5 \%$				
100	4,5 × 11	B33063-B6101-H7	100					
110	4,5 × 11	B33063-B6111-H7	100					
120	4,5 × 11	B33063-B6121-H7	100					
130	4,5 × 11	B33063-B6131-H7	100					
150	4,5 × 11	B33063-B6151-H7	100					
160	4,5 × 11	B33063-B6161-H7	100					
180	4,5 × 11	B33063-B6181-H7	100					
200	4,5 × 11	B33063-B6201-H7	100					
220	4,5 × 11	B33063-B6221-H7	100					
240	4,5 × 11	B33063-B6241-H7	100					
270	4,5 × 11	B33063-B6271-H7	100					
300	4,5 × 11	B33063-B6301-H7	100					
330	4,5 × 11	B33063-B6331-H7	100					
360	6,0 × 11	B33063-B6361-H7	100					
390	6,0 × 11	B33063-B6391-H7	100					
430	6,0 × 11	B33063-B6431-H7	100					
470	6,0 × 11	B33063-B6471-H7	100					
510	6,0 × 11	B33063-B6511-H7	100					
560	6,0 × 11	B33063-B6561-H7	100					
620	6,0 × 11	B33063-B6621-H7	100					
680	6,0 × 11	B33063-B6681-H7	100					
750	6,0 × 11	B33063-B6751-H7	100					
820	6,0 × 11	B33063-B6821-H7	100					
910	6,0 × 11	B33063-B6911-H7	100					
1000	6,0 × 11	B33063-B6102-H7	100					
1100	6,9 × 11	B33063-B6112-H7	100					
1200	6,9 × 11	B33063-B6122-H7	100					
1300	6,9 × 11	B33063-B6132-H7	100					
1500	6,9 × 11	B33063-B6152-H7	100					
1600	7,9 × 11	B33063-B6162-H7	100					
1800	7,9 × 11	B33063-B6182-H7	100					
2000	7,9 × 11	B33063-B6202-H7	100					
2200	7,9 × 11	B33063-B6222-H7	100					
2400	7,6 × 16,5	B33063-B6242-H7	100					
2700	7,6 × 16,5	B33063-B6272-H7	100					
3000	7,6 × 16,5	B33063-B6302-H7	100					
3300	7,6 × 16,5	B33063-B6332-H7	100					
3600	10,4 × 16,5	B33063-B6362-H7	100					
3900	10,4 × 16,5	B33063-B6392-H7	100					
4300	10,4 × 16,5	B33063-B6432-H7	100					
4700	10,4 × 16,5	B33063-B6472-H7	100					
5100	10,4 × 16,5	B33063-B6512-H7	100					

Polypropylene Capacitors (KP)

C _R	Dimensions	Ordering code	Min. qty.	Price per 100				
	<i>d</i> _{max} × <i>l</i> _{max}			Min. qty. +	250 +	500 +	1000 +	2500 +
pF	mm							
630 Vdc			Color band: black		Capacitance tolerance ± 2,5 %			
5600	10,4 × 16,5	B33063-B6562-H7	100					
6200	10,4 × 16,5	B33063-B6622-H7	100					
6800	10,4 × 16,5	B33063-B6682-H7	100					
7500	10,4 × 16,5	B33063-B6752-H7	100					
8200	9,6 × 21,5	B33063-B6822-H7	100					
9100	10,4 × 21,5	B33063-B6912-H7	100					
10000	10,4 × 21,5	B33063-B6103-H7	100					
11000	12,3 × 21,5	B33063-B6113-H7	100					
12000	12,3 × 21,5	B33063-B6123-H7	100					
13000	12,3 × 21,5	B33063-B6133-H7	100					
15000	12,3 × 21,5	B33063-B6153-H7	100					
16000	14,5 × 21,5	B33063-B6163-H7	100					
18000	14,5 × 21,5	B33063-B6183-H7	100					
20000	14,5 × 21,5	B33063-B6203-H7	100					
22000	14,5 × 21,5	B33063-B6223-H7	100					
160 Vdc			Color band: red-violet		Capacitance tolerance ± 2,5 %			
360	4,5 × 11	B33063-B1361-H7	100					
390	4,5 × 11	B33063-B1391-H7	100					
430	4,5 × 11	B33063-B1431-H7	100					
470	4,5 × 11	B33063-B1471-H7	100					
510	4,5 × 11	B33063-B1511-H7	100					
560	4,5 × 11	B33063-B1561-H7	100					
620	4,5 × 11	B33063-B1621-H7	100					
680	4,5 × 11	B33063-B1681-H7	100					
750	4,5 × 11	B33063-B1751-H7	100					
820	4,5 × 11	B33063-B1821-H7	100					
910	4,5 × 11	B33063-B1911-H7	100					
1000	4,5 × 11	B33063-B1102-H7	100					
1100	4,5 × 11	B33063-B1112-H7	100					
1200	4,5 × 11	B33063-B1122-H7	100					
1300	4,5 × 11	B33063-B1132-H7	100					
1500	4,5 × 11	B33063-B1152-H7	100					
1600	5,0 × 11	B33063-B1162-H7	100					
1800	5,0 × 11	B33063-B1182-H7	100					
2000	5,0 × 11	B33063-B1202-H7	100					
2200	5,0 × 11	B33063-B1222-H7	100					
2400	5,7 × 11	B33063-B1242-H7	100					
2700	5,7 × 11	B33063-B1272-H7	100					
3000	5,7 × 11	B33063-B1302-H7	100					
3300	5,7 × 11	B33063-B1332-H7	100					

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Polypropylene Capacitors (KP)

CR	Dimensions $d_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price per 100					
pF	mm			Min. qty. +	250 +	500 +	1000 +	2500 +	
160 Vdc		Color band: red-violet			Capacitance tolerance $\pm 2,5 \%$				
3600	7,8 × 11	B33063-B1362-H7	100						
3900	7,8 × 11	B33063-B1392-H7	100						
4300	7,8 × 11	B33063-B1432-H7	100						
4700	7,8 × 11	B33063-B1472-H7	100						
5100	7,8 × 11	B33063-B1512-H7	100						
5600	7,8 × 11	B33063-B1562-H7	100						
6200	7,8 × 11	B33063-B1622-H7	100						
6800	7,8 × 11	B33063-B1682-H7	100						
7500	7,8 × 11	B33063-B1752-H7	100						
8200	8,1 × 11	B33063-B1822-H7	100						
9100	8,7 × 11	B33063-B1912-H7	100						
10000	8,7 × 11	B33063-B1103-H7	100						
12000	8,0 × 16,5	B33063-B1123-H7	100						
15000	8,0 × 16,5	B33063-B1153-H7	100						
18000	9,5 × 16,5	B33063-B1183-H7	100						
22000	9,5 × 16,5	B33063-B1223-H7	100						
27000	10,2 × 16,5	B33063-B1273-H7	100						
33000	10,0 × 21,5	B33063-B1333-H7	100						
39000	11,7 × 21,5	B33063-B1393-H7	100						
47000	11,7 × 21,5	B33063-B1473-H7	100						
56000	15,0 × 21,5	B33063-B1563-H7	100						
68000	15,0 × 21,5	B33063-B1683-H7	100						
82000	15,0 × 21,5	B33063-B1823-H7	100						
100000	16,5 × 21,5	B33063-B1104-H7	100						

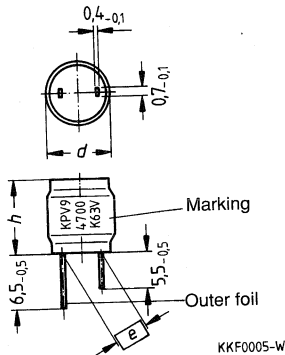
Polypropylene Capacitors (KP)

General-purpose grade capacitor

In accordance with DIN 44 390, part 1 (draft)

Application: RF and IF filters, resonant circuits,
car radio, VCR, HiFi, TV, timing circuits

Rated dc voltage V_R	63 V	160 V	630 V
AC voltage V_{ac}	25 V	65 V	210 V
IEC climatic category	40/085/21		
Dissipation factor $\tan \delta$	10 kHz	$< (0,2 \dots 0,5) \cdot 10^{-3}$	
	100 kHz	$< (0,3 \dots 0,6) \cdot 10^{-3}$	
Temperature coefficient α_C (for $C_R \geq 100$ pF)	$-(100 \dots 300) \cdot 10^{-6}/K$		



Dimensions in mm

Marking:
(red)

Design code (KP)
Date of manufacture (coded)
Rated capacitance (pF)
Tolerance (code letter)
Rated voltage (uncoded)

Outer foil:
Longer lead

Polypropylene Capacitors (KP)

CR	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100				
pF	mm			Min. qty. +	250 +	500 +	1000 +	2500 +
630 Vdc								
Lead spacing $\square e = 5 \text{ mm}$			Capacitance tolerance $\pm 2,5 \%$					
100	6,7 × 9,0	B33061-C6101-H	100					
120	6,7 × 9,0	B33061-C6121-H	100					
150	6,7 × 9,0	B33061-C6151-H	100					
180	6,7 × 9,0	B33061-C6181-H	100					
220	6,7 × 9,0	B33061-C6221-H	100					
270	6,7 × 9,0	B33061-C6271-H	100					
330	6,7 × 9,0	B33061-C6331-H	100					
390	6,7 × 9,0	B33061-C6391-H	100					
470	6,7 × 9,0	B33061-C6471-H	100					
560	6,7 × 9,0	B33061-C6561-H	100					
680	6,7 × 9,0	B33061-C6681-H	100					
820	6,7 × 9,0	B33061-C6821-H	100					
1000	6,7 × 9,0	B33061-C6102-H	100					
1200	8,1 × 12,5	B33061-C6122-H	100					
1500	8,1 × 12,5	B33061-C6152-H	100					
1800	8,1 × 12,5	B33061-C6182-H	100					
2200	8,8 × 12,5	B33061-C6222-H	100					
2700	8,8 × 12,5	B33061-C6272-H	100					
3300	9,1 × 12,5	B33061-C6332-H	100					
3900	8,4 × 15,5	B33061-C6392-H	100					
4700	9,0 × 15,5	B33061-C6472-H	100					
5600	9,6 × 15,5	B33061-C6562-H	100					
6800	9,6 × 15,5	B33061-C6682-H	100					
160 Vdc								
Lead spacing $\square e = 5 \text{ mm}$			Capacitance tolerance $\pm 2,5 \%$					
1200	6,7 × 9,0	B33061-C1122-H	100					
1500	6,7 × 9,0	B33061-C1152-H	100					
1800	6,7 × 9,0	B33061-C1182-H	100					
2200	6,7 × 9,0	B33061-C1222-H	100					
2700	6,7 × 9,0	B33061-C1272-H	100					
3300	6,7 × 9,0	B33061-C1332-H	100					
3900	6,7 × 9,0	B33061-C1392-H	100					
63 Vdc								
Lead spacing $\square e = 5 \text{ mm}$			Capacitance tolerance $\pm 2,5 \%$					
4700	6,7 × 9,0	B33061-C5472-H	100					
5600	6,7 × 9,0	B33061-C5562-H	100					
6800	6,7 × 9,0	B33061-C5682-H	100					
8200	6,7 × 12,5	B33061-C5822-H	100					
10000	6,7 × 12,5	B33061-C5103-H	100					
12000	8,2 × 12,5	B33061-C5123-H	100					
15000	8,2 × 12,5	B33061-C5153-H	100					
18000	8,2 × 12,5	B33061-C5183-H	100					
22000	7,8 × 15,5	B33061-C5223-H	100					
27000	9,2 × 15,5	B33061-C5273-H	100					
33000	9,2 × 15,5	B33061-C5333-H	100					

Polypropylene Capacitors (KP)

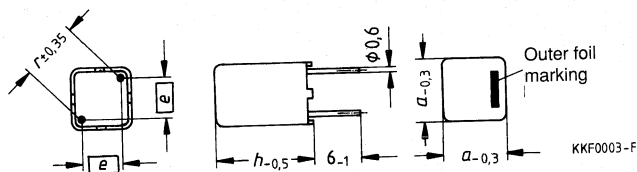
Long-life grade capacitor

In accordance with DIN 44 127 (draft)

Application: Telecommunications, measuring systems,
resonant circuits, temperature compensation

Plastic case, sealed, flame-retardant

Operating time	200 000 h
Failure rate	8 fit
Rated dc voltage V_R	63 V
AC voltage V_{ac}	25 V
IEC climatic category	55/085/56
Dissipation factor $\tan \delta$	10 kHz $< (0,3 \dots 0,5) \cdot 10^{-3}$
	100 kHz $< (0,4 \dots 0,9) \cdot 10^{-3}$
Temperature coefficient α_C (for $C_R \geq 100$ pF)	$-(80 \dots 360) \cdot 10^{-6}/K$



Dimensions in mm

Marking: (black)	Design code (KP)
	Rated capacitance (pF)
	Tolerance (code letter)
	Climatic category (code letters)
	Rated voltage (uncoded)
	Date of manufacture
Outer foil:	Bar

Polypropylene Capacitors (KP)

CR	Dimensions $a \times a \times h$	Ordering code	Min. qty.	Price each			
pF	mm			Min. qty. +	50 +	100 +	250 +
63 Vdc							
		Lead spacing $e = 5,08 \text{ mm}$, $r = 7,2 \text{ mm}$		Capacitance tolerance $\pm 1 \%$			
100	$6,3 \times 6,3 \times 11$	B33531-A5101-F	10				
110	$6,3 \times 6,3 \times 11$	B33531-A5111-F	10				
120	$6,3 \times 6,3 \times 11$	B33531-A5121-F	10				
130	$6,3 \times 6,3 \times 11$	B33531-A5131-F	10				
150	$6,3 \times 6,3 \times 11$	B33531-A5151-F	10				
160	$6,3 \times 6,3 \times 11$	B33531-A5161-F	10				
180	$6,3 \times 6,3 \times 11$	B33531-A5181-F	10				
200	$6,3 \times 6,3 \times 11$	B33531-A5201-F	10				
220	$6,3 \times 6,3 \times 11$	B33531-A5221-F	10				
240	$6,3 \times 6,3 \times 11$	B33531-A5241-F	10				
270	$6,3 \times 6,3 \times 11$	B33531-A5271-F	10				
300	$6,3 \times 6,3 \times 11$	B33531-A5301-F	10				
330	$6,3 \times 6,3 \times 11$	B33531-A5331-F	10				
360	$6,3 \times 6,3 \times 11$	B33531-A5361-F	10				
390	$6,3 \times 6,3 \times 11$	B33531-A5391-F	10				
430	$6,3 \times 6,3 \times 11$	B33531-A5431-F	10				
470	$6,3 \times 6,3 \times 11$	B33531-A5471-F	10				
510	$6,3 \times 6,3 \times 11$	B33531-A5511-F	20				
560	$6,3 \times 6,3 \times 11$	B33531-A5561-F	20				
620	$6,3 \times 6,3 \times 11$	B33531-A5621-F	20				
680	$6,3 \times 6,3 \times 11$	B33531-A5681-F	20				
750	$6,3 \times 6,3 \times 11$	B33531-A5751-F	20				
820	$6,3 \times 6,3 \times 11$	B33531-A5821-F	20				
910	$6,3 \times 6,3 \times 11$	B33531-A5911-F	20				
1000	$6,3 \times 6,3 \times 11$	B33531-A5102-F	20				
1100	$6,3 \times 6,3 \times 11$	B33531-A5112-F	20				
1200	$6,3 \times 6,3 \times 11$	B33531-A5122-F	20				
1300	$6,3 \times 6,3 \times 11$	B33531-A5132-F	20				
1500	$6,3 \times 6,3 \times 11$	B33531-A5152-F	20				
1600	$6,3 \times 6,3 \times 11$	B33531-A5162-F	20				
1800	$6,3 \times 6,3 \times 11$	B33531-A5182-F	20				
2000	$6,3 \times 6,3 \times 11$	B33531-A5202-F	20				
2200	$6,3 \times 6,3 \times 11$	B33531-A5222-F	20				
2400	$6,3 \times 6,3 \times 11$	B33531-A5242-F	20				
2700	$6,3 \times 6,3 \times 11$	B33531-A5272-F	20				
3000	$6,3 \times 6,3 \times 11$	B33531-A5302-F	20				
3300	$6,3 \times 6,3 \times 11$	B33531-A5332-F	20				
3600	$6,3 \times 6,3 \times 11$	B33531-A5362-F	20				
3900	$6,3 \times 6,3 \times 11$	B33531-A5392-F	20				
4300	$6,3 \times 6,3 \times 11$	B33531-A5432-F	20				

Polypropylene Capacitors (KP)

CR	Dimensions $a \times a \times h$	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	
pF	mm							
63 Vdc		Lead spacing $\overline{e}$ = 5,08 mm, r = 7,2 mm			Capacitance tolerance $\pm 1\%$			
4700	$6,3 \times 6,3 \times 11$	B33531-A5472-F	20					
5100	$6,3 \times 6,3 \times 11$	B33531-A5512-F	20					
5600	$6,3 \times 6,3 \times 11$	B33531-A5562-F	20					
6200	$6,3 \times 6,3 \times 11$	B33531-A5622-F	20					
6800	$6,3 \times 6,3 \times 11$	B33531-A5682-F	20					
7500	$6,3 \times 6,3 \times 11$	B33531-A5752-F	20					
8200	$6,3 \times 6,3 \times 11$	B33531-A5822-F	20					
9100	$6,3 \times 6,3 \times 11$	B33531-A5912-F	20					
10000	$7,5 \times 7,5 \times 13$	B33531-A5103-F	20					
11000	$7,5 \times 7,5 \times 13$	B33531-A5113-F	20					
12000	$7,5 \times 7,5 \times 13$	B33531-A5123-F	20					
13000	$7,5 \times 7,5 \times 13$	B33531-A5133-F	20					
15000	$7,5 \times 7,5 \times 13$	B33531-A5153-F	20					
16000	$7,5 \times 7,5 \times 13$	B33531-A5163-F	15					
18000	$7,5 \times 7,5 \times 13$	B33531-A5183-F	15					
20000	$7,5 \times 7,5 \times 13$	B33531-A5203-F	15					
63 Vdc		Lead spacing $\overline{e}$ = 7,62 mm, r = 10,75 mm			Capacitance tolerance $\pm 1\%$			
22000	$10 \times 10 \times 13$	B33531-A5223-F	15					
24000	$10 \times 10 \times 13$	B33531-A5243-F	15					
27000	$10 \times 10 \times 13$	B33531-A5273-F	15					
30000	$10 \times 10 \times 13$	B33531-A5303-F	15					
33000	$10 \times 10 \times 13$	B33531-A5333-F	15					
36000	$10 \times 10 \times 13$	B33531-A5363-F	15					
39000	$10 \times 10 \times 13$	B33531-A5393-F	15					
43000	$10 \times 10 \times 13$	B33531-A5433-F	15					
63 Vdc		Lead spacing $\overline{e}$ = 10,16 mm, r = 14,35 mm			Capacitance tolerance $\pm 1\%$			
47000	$12,5 \times 12,5 \times 13$	B33531-A5473-F	15					
51000	$12,5 \times 12,5 \times 13$	B33531-A5513-F	15					
56000	$12,5 \times 12,5 \times 13$	B33531-A5563-F	15					
62000	$12,5 \times 12,5 \times 13$	B33531-A5623-F	15					
68000	$12,5 \times 12,5 \times 13$	B33531-A5683-F	15					

Metallized Film Capacitors

Contents	Type	Page
MKT capacitors	B 32529	260
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	B 32521	262
	B 32522	263
	B 32523	264
	B 32524	265
	B 32560	266
	B 32561	267
	B 32562	268
MKP capacitors	B 32650	269
	B 32655	270
	B 32657	270
MFP capacitors	B 32642	272
	B 32643	272
	B 32644	273
MKL (MKU) capacitors	B 32110	274
	B 32120	276

▼ Newly included in this edition

Expanded spectrum of MKT capacitors with 5-mm lead spacing: $V_R = 100\text{ V}$, $C_R = 1,0\text{ to }15\text{ nF}$	B 32529	261
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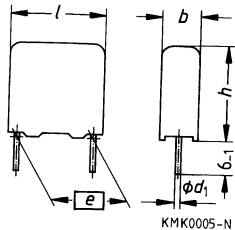
Further technical literature

Data Book "Metallized Film Capacitors", B4-P6001-X-X-7600
Short Form Catalog "Metallized Film Capacitors", B4-P6008-X-X-7400



General-purpose grade capacitor
In accordance with DIN 44 112. Self-healing.
With quality approval as per CECC 30401-043

Dielectric: polyethylene terephthalate
Stacked-film technology for lead spacing
5 ... 15 mm (50 ... 400 Vdc)
Flame-retardant (UL 94V-0) plastic case with
epoxy resin sealing



$\overline{e} \pm 0,4$ mm	$l_{\max}$ mm	$\varnothing d_1$ mm	Type
5,0	7,2	0,5	B 32529
7,5	10,0	0,6	B 32520
10,0	13,0	0,6	B 32521
15,0	18,0	0,8	B 32522
22,5	26,5	0,8	B 32523
27,5	31,5	0,8	B 32524

Rated voltage V_R
IEC climatic category
Reliability at 40 °C, 0,5 V_R

63 ... 630 Vdc
55/100/56
 $1 \cdot 10^{-9}/h = 1$ fit

Dissipation factor $\tan \delta$, 20 °C
(upper limit values)

	$< 0,1 \mu F$	$\geq 0,1 \mu F \dots < 1 \mu F$	$\geq 1 \mu F$
at 1 kHz	$8 \cdot 10^{-3}$	$10 \cdot 10^{-3}$	$10 \cdot 10^{-3}$
at 10 kHz	$15 \cdot 10^{-3}$	$20 \cdot 10^{-3}$	—

Rate of voltage rise $(dv/dt)_{\max}$

2 ... 400 V/ μs

C_R	Dimensions $b_{\max} \times h_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price per 100				
nF	mm			Min. qty. +	250 +	500 +	1000 +	5000 +

B 32529

$V_R = 63$ Vdc, $V_{rms} = 40$ Vac

Lead spacing $\overline{e} = 5$ mm

Capacitance tolerance $\pm 10 \%$

100	$2,5 \times 6,5 \times 7,2$	B32529-C104-K	100					
150	$3,0 \times 6,5 \times 7,2$	B32529-C154-K	100					
220	$3,5 \times 8,0 \times 7,2$	B32529-C224-K	100					
330	$3,5 \times 8,0 \times 7,2$	B32529-C334-K	100					
470	$4,5 \times 9,5 \times 7,2$	B32529-C474-K	100					
680	$5,0 \times 10,0 \times 7,2$	B32529-B684-K	100					
1,0 μF	$6,0 \times 10,5 \times 7,2$	B32529-B105-K	100					
1,5 μF	$7,2 \times 13,0 \times 7,2$	B32529-B155-K	100					
2,2 μF ¹⁾	$7,2 \times 13,0 \times 7,2$	B32529-C5225-K	100					

¹⁾ $V_R = 50$ Vdc, $V_{rms} = 32$ Vac

C _R	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100				
				Min. qty. +	250 +	500 +	1000 +	5000 +
nF	mm							

B 32529 $V_R = 100 \text{ Vdc}$, $V_{rms} = 63 \text{ Vac}$ Lead spacing $\boxed{e} = 5 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

▼ 1,0	2,5 × 6,5 × 7,2	B32529-C1102-K	100					
▼ 1,5	2,5 × 6,5 × 7,2	B32529-C1152-K	100					
▼ 2,2	2,5 × 6,5 × 7,2	B32529-C1222-K	100					
▼ 3,3	2,5 × 6,5 × 7,2	B32529-C1332-K	100					
▼ 4,7	2,5 × 6,5 × 7,2	B32529-C1472-K	100					
▼ 6,8	2,5 × 6,5 × 7,2	B32529-C1682-K	100					
▼ 10	2,5 × 6,5 × 7,2	B32529-C1103-K	100					
▼ 15	2,5 × 6,5 × 7,2	B32529-C1153-K	100					
▼ 22	2,5 × 6,5 × 7,2	B32529-C1223-K	100					
▼ 33	2,5 × 6,5 × 7,2	B32529-C1333-K	100					
▼ 47	2,5 × 6,5 × 7,2	B32529-C1473-K	100					
▼ 68	2,5 × 6,5 × 7,2	B32529-C1683-K	100					

B 32520 $V_R = 63 \text{ Vdc}$, $V_{rms} = 40 \text{ Vac}$ Lead spacing $\boxed{e} = 7,5 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

220	3,0 × 8,0 × 10	B32520-B224-K	100					
330	4,0 × 8,5 × 10	B32520-B334-K	100					
▼ 470	4,0 × 8,5 × 10	B32520-K474-K	100					
680	5,0 × 10,5 × 10	B32520-C684-K	100					
1,0 μF	6,0 × 12,0 × 10	B32520-B105-K	100					

 $V_R = 100 \text{ Vdc}$, $V_{rms} = 63 \text{ Vac}$ Lead spacing $\boxed{e} = 7,5 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

47	3,0 × 8,0 × 10	B32520-B1473-K	100					
68	3,0 × 8,0 × 10	B32520-B1683-K	100					
100	3,0 × 8,0 × 10	B32520-B1104-K	100					
150	3,0 × 8,0 × 10	B32520-C1154-K	100					
220	4,0 × 8,5 × 10	B32520-C1224-K	100					
330	5,0 × 10,5 × 10	B32520-B1334-K	100					
470	6,0 × 12,0 × 10	B32520-B1474-K	100					
680	6,0 × 12,0 × 10	B32520-B1684-K	100					

 $V_R = 250 \text{ Vdc}$, $V_{rms} = 160 \text{ Vac}$ Lead spacing $\boxed{e} = 7,5 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

22	3,0 × 8,0 × 10	B32520-B3223-K	100					
33	3,0 × 8,0 × 10	B32520-B3333-K	100					
47	4,0 × 8,5 × 10	B32520-B3473-K	100					
68	5,0 × 10,5 × 10	B32520-B3683-K	100					
100	5,0 × 10,5 × 10	B32520-B3104-K	100					
150	6,0 × 12,0 × 10	B32520-B3154-K	100					

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C _R nF	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max} mm	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	250 +	500 +	1000 +

B 32520 $V_R = 400 \text{ Vdc}$, $V_{rms} = 200 \text{ Vac}$ Lead spacing $\boxed{e} = 7,5 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

1,0	3,0 × 8,0 × 10	B32520-B6102-K	100				
1,5	3,0 × 8,0 × 10	B32520-B6152-K	100				
2,2	3,0 × 8,0 × 10	B32520-B6222-K	100				
3,3	3,0 × 8,0 × 10	B32520-B6332-K	100				
4,7	3,0 × 8,0 × 10	B32520-B6472-K	100				
6,8	3,0 × 8,0 × 10	B32520-B6682-K	100				
10	3,0 × 8,0 × 10	B32520-B6103-K	100				
15	3,0 × 8,0 × 10	B32520-B6153-K	100				
22	4,0 × 8,5 × 10	B32520-B6223-K	100				
33	5,0 × 10,5 × 10	B32520-B6333-K	100				
47	5,0 × 10,5 × 10	B32520-B6473-K	100				
68	6,0 × 12,0 × 10	B32520-B6683-K	100				

B 32521 $V_R = 63 \text{ Vdc}$, $V_{rms} = 40 \text{ Vac}$ Lead spacing $\boxed{e} = 10 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

220	4,0 × 9,0 × 13	B32521-C224-K	100				
330	4,0 × 9,0 × 13	B32521-C334-K	100				
470	4,0 × 9,0 × 13	B32521-C474-K	100				
680	5,0 × 11,0 × 13	B32521-C684-K	100				
1,0 µF	5,0 × 11,0 × 13	B32521-C105-K	100				

 $V_R = 100 \text{ Vdc}$, $V_{rms} = 63 \text{ Vac}$ Lead spacing $\boxed{e} = 10 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

100	4,0 × 9,0 × 13	B32521-C1104-K	100				
150	4,0 × 9,0 × 13	B32521-C1154-K	100				
220	4,0 × 9,0 × 13	B32521-C1224-K	100				
330	4,0 × 9,0 × 13	B32521-C1334-K	100				
470	5,0 × 11,0 × 13	B32521-C1474-K	100				

 $V_R = 250 \text{ Vdc}$, $V_{rms} = 160 \text{ Vac}$ Lead spacing $\boxed{e} = 10 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

47	4,0 × 9,0 × 13	B32521-C3473-K	100				
68	4,0 × 9,0 × 13	B32521-C3683-K	100				
100	4,0 × 9,0 × 13	B32521-C3104-K	100				
150	5,0 × 11,0 × 13	B32521-C3154-K	100				

 $V_R = 400 \text{ Vdc}$, $V_{rms} = 200 \text{ Vac}$ Lead spacing $\boxed{e} = 10 \text{ mm}$ Capacitance tolerance $\pm 10 \%$

10	4,0 × 9,0 × 13	B32521-C6103-K	100				
15	4,0 × 9,0 × 13	B32521-C6153-K	100				
22	4,0 × 9,0 × 13	B32521-C6223-K	100				
33	4,0 × 9,0 × 13	B32521-C6333-K	100				
67	5,0 × 11,0 × 13	B32521-C6473-K	100				
68	5,0 × 11,0 × 13	B32521-C6683-K	100				

CR	Dimensions $b_{\max} \times h_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price in DM per 100				
nF	mm			Min. qty. +	250 +	500 +	1000 +	
B 32522								
$V_R = 63 \text{ Vdc}$, $V_{rms} = 40 \text{ Vac}$		Lead spacing $\boxed{e} = 15 \text{ mm}$		Capacitance tolerance $\pm 10 \%$				
680	$5,0 \times 10,5 \times 18$	B32522-C684-K	100					
1,0 μF	$5,0 \times 10,5 \times 18$	B32522-C105-K	100					
1,5 μF	$5,0 \times 10,5 \times 18$	B32522-C155-K	100					
2,2 μF	$7,0 \times 12,5 \times 18$	B32522-C225-K	100					
3,3 μF	$8,5 \times 14,5 \times 18$	B32522-C335-K	100					
4,7 μF	$9,0 \times 17,5 \times 18$	B32522-C475-K	100					
B 32522								
$V_R = 100 \text{ Vdc}$, $V_{rms} = 63 \text{ Vac}$		Lead spacing $\boxed{e} = 15 \text{ mm}$		Capacitance tolerance $\pm 10 \%$				
330	$5,0 \times 10,5 \times 18$	B32522-C1334-K	100					
470	$5,0 \times 10,5 \times 18$	B32522-C1474-K	100					
680	$5,0 \times 10,5 \times 18$	B32522-C1684-K	100					
1,0 μF	$6,0 \times 11,0 \times 18$	B32522-C1105-K	100					
1,5 μF	$7,0 \times 12,5 \times 18$	B32522-C1155-K	100					
2,2 μF	$8,5 \times 14,5 \times 18$	B32522-C1225-K	100					
$V_R = 250 \text{ Vdc}$, $V_{rms} = 160 \text{ Vac}$ Lead spacing $\boxed{e} = 15 \text{ mm}$ Capacitance tolerance $\pm 10 \%$								
100	$5,0 \times 10,5 \times 18$	B32522-C3104-K	100					
150	$5,0 \times 10,5 \times 18$	B32522-C3154-K	100					
220	$5,0 \times 10,5 \times 18$	B32522-C3224-K	100					
330	$6,0 \times 11,0 \times 18$	B32522-C3334-K	100					
470	$7,0 \times 12,5 \times 18$	B32522-C3474-K	100					
680	$8,5 \times 14,5 \times 18$	B32522-C3684-K	100					
1,0 μF	$9,0 \times 17,5 \times 18$	B32522-C3105-K	100					
$V_R = 400 \text{ Vdc}$, $V_{rms} = 200 \text{ Vac}$ Lead spacing $\boxed{e} = 15 \text{ mm}$ Capacitance tolerance $\pm 10 \%$								
47	$5,0 \times 10,5 \times 18$	B32522-C6473-K	100					
68	$5,0 \times 10,5 \times 18$	B32522-C6683-K	100					
100	$5,0 \times 10,5 \times 18$	B32522-C6104-K	100					
150	$6,0 \times 11,0 \times 18$	B32522-C6154-K	100					
220	$7,0 \times 12,5 \times 18$	B32522-C6224-K	100					
330	$8,5 \times 14,5 \times 18$	B32522-C6334-K	100					
$V_R = 630 \text{ Vdc}$, $V_{rms} = 220 \text{ Vac}$ Lead spacing $\boxed{e} = 15 \text{ mm}$ Capacitance tolerance $\pm 10 \%$								
33	$5,0 \times 10,5 \times 18$	B32522-N8333-K	100					
47	$6,0 \times 11,0 \times 18$	B32522-N8473-K	100					
68	$7,0 \times 12,5 \times 18$	B32522-N8683-K	100					
100	$8,5 \times 14,5 \times 18$	B32522-N8104-K	100					

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C _R μF	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100				
	mm			Min. qty. +	250 +	500 +	1000 +	
B 32523								
V_R = 63 Vdc, V_{rms} = 40 Vac		Lead spacing e = 22,5 mm	Capacitance tolerance ± 10 %					
1,0	6,0 × 15,0 × 26,5	B32523-C105-K	100					
1,5	6,0 × 15,0 × 26,5	B32523-C155-K	100					
2,2	6,0 × 15,0 × 26,5	B32523-C225-K	100					
3,3	6,0 × 15,0 × 26,5	B32523-C335-K	100					
4,7	7,0 × 16,0 × 26,5	B32523-C475-K	100					
6,8	8,5 × 16,5 × 26,5	B32523-C685-K	100					
10	11,0 × 20,5 × 26,5	B32523-B106-K	100					
V_R = 100 Vdc, V_{rms} = 63 Vac		Lead spacing e = 22,5 mm	Capacitance tolerance ± 10 %					
1,5	6,0 × 15,0 × 26,5	B32523-N1155-K	100					
2,2	7,0 × 16,0 × 26,5	B32523-P1225-K	100					
3,3	8,5 × 16,5 × 26,5	B32523-N1335-K	100					
4,7	11,0 × 20,5 × 26,5	B32523-N1475-K	100					
V_R = 250 Vdc, V_{rms} = 160 Vac		Lead spacing e = 22,5 mm	Capacitance tolerance ± 10 %					
0,47	6,0 × 15,0 × 26,5	B32523-N3474-K	100					
0,68	6,0 × 15,0 × 26,5	B32523-N3684-K	100					
1,0	8,5 × 16,5 × 26,5	B32523-N3105-K	100					
1,5	10,5 × 16,5 × 26,5	B32523-N3155-K	100					
2,2	11,0 × 20,5 × 26,5	B32523-N3225-K	100					
V_R = 400 Vdc, V_{rms} = 200 Vac		Lead spacing e = 22,5 mm	Capacitance tolerance ± 10 %					
0,22	6,0 × 15,0 × 26,5	B32523-N6224-K	100					
0,33	8,5 × 16,5 × 26,5	B32523-N6334-K	100					
0,47	10,5 × 16,5 × 26,5	B32523-A6474-K	100					
0,68	11,0 × 20,5 × 26,5	B32523-N6684-K	100					
V_R = 630 Vdc, V_{rms} = 220 Vac		Lead spacing e = 22,5 mm	Capacitance tolerance ± 10 %					
0,10	6,0 × 15,0 × 26,5	B32523-N8104-K	100					
0,15	7,0 × 16,0 × 26,5	B32523-P8154-K	100					
0,22	10,5 × 16,5 × 26,5	B32523-A8224-K	100					

▽
▽

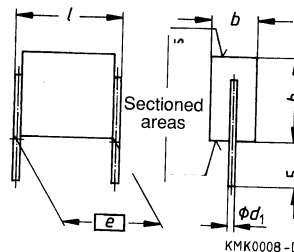
C _R μF	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max} mm	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	100 +	250 +	500 +
B 32524							
V_R = 100 Vdc, V_{rms} = 63 Vac		Lead spacing e = 27,5 mm	Capacitance tolerance ± 10 %				
▽ 4,7 6,8 10	11,0 × 21,0 × 31,5	B32524-N1475-K	50				
	11,0 × 21,0 × 31,5	B32524-P1685-K	50				
	14,0 × 24,5 × 31,5	B32524-N1106-K	50				
V_R = 250 Vdc, V_{rms} = 160 Vac		Lead spacing e = 27,5 mm	Capacitance tolerance ± 10 %				
▽ ▽ 1,5 2,2 3,3 4,7	11,0 × 21,0 × 31,5	B32524-N3155-K	50				
	11,0 × 21,0 × 31,5	B32524-N3225-K	50				
	13,5 × 23,0 × 31,5	B32524-B3335-K	50				
	15,0 × 24,5 × 31,5	B32524-B3475-K	50				
V_R = 400 Vdc, V_{rms} = 200 Vac		Lead spacing e = 27,5 mm	Capacitance tolerance ± 10 %				
▽ ▽ ▽ ▽ 0,68 1,0 1,5 2,2	11,0 × 21,0 × 31,5	B32524-N6684-K	50				
	11,0 × 21,0 × 31,5	B32524-B6105-K	50				
	13,5 × 23,0 × 31,5	B32524-C6155-K	50				
	18,0 × 27,5 × 31,5	B32524-B6225-K	50				
V_R = 630 Vdc, V_{rms} = 220 Vac		Lead spacing e = 27,5 mm	Capacitance tolerance ± 10 %				
0,33 0,47 0,68	11,0 × 21,0 × 31,5	B32524-N8334-K	50				
	12,5 × 21,5 × 31,5	B32524-N8474-K	50				
	14,0 × 24,5 × 31,5	B32524-N8684-K	50				

**Stacked-film capacitor. Self-healing.
With quality approval as per CECC 30401-007**

Dielectric: polyethylene terephthalate

Without encapsulation¹⁾

Extremely small dimensions

B 32560 (7,5-mm lead spacing) only for
single-clad PCBs

$e \pm 0,4$ mm	$l_{\max}$ mm	ϕd_1 mm	Type
7,5	9,0	0,6	B 32560
10,0	11,5	0,6	B 32561
15,0	16,5	0,6	B 32562-D
15,0	16,5	0,8	B 32562-E

Rated voltage V_R

IEC climatic category

Reliability at 40 °C, 0,5 V_R Dissipation factor $\tan \delta$, 20 °C
(Upper limit values)

100 ... 400 Vdc

55/100/21²⁾ $2 \cdot 10^{-9}/h = 2 \text{ fit}$

	$< 1,0 \mu\text{F}$	$\geq 1,0 \mu\text{F}$
at 1 kHz	$8 \cdot 10^{-3}$	$10 \cdot 10^{-3}$
at 10 kHz	$15 \cdot 10^{-3}$	—

Rate of voltage rise $(dV/dt)_{\max}$ 50 ... 250 V/ μs

CR	Dimensions $b_{\max} \times l_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price per 100			
nF	mm			Min. qty. +	250 +	500 +	1000 +

B 32560

 $V_R = 100 \text{ Vdc}$, $V_{\text{rms}} = 63 \text{ Vac}$ Lead spacing $e = 7,5 \text{ mm}$ Capacitance tolerance $\pm 5 \%$

68	$2,0 \times 6,2 \times 9$	B32560-D1683-J	100				
100	$2,3 \times 7,1 \times 9$	B32560-D1104-J	100				
150	$3,2 \times 6,5 \times 9$	B32560-D1154-J	100				
220	$4,1 \times 6,6 \times 9$	B32560-D1224-J	100				
330	$5,4 \times 7,1 \times 9$	B32560-D1334-J	100				
470	$5,4 \times 10,0 \times 9$	B32560-D1474-J	100				
680	$7,5 \times 9,8 \times 9$	B32560-D1684-J	100				

¹⁾ Observe creepage distances and clearances! Insulating strength of sectioned areas $1,5 \cdot V_R$ or at least 300 Vdc.
²⁾ The test requirements are also met after 56 days of exposure to damp heat.

C _R nF	Dimensions	Ordering code	Min. qty.	Price per 100			
	$b_{\max} \times l_{\max} \times l_{\max}$ mm			Min. qty. +	250 +	500 +	1000 +
B 32560							
$V_R = 250 \text{ Vdc}, V_{\text{rms}} = 160 \text{ Vac}$		Lead spacing $\boxed{e} = 7,5 \text{ mm}$	Capacitance tolerance $\pm 5 \%$				
10	2,1 × 5,9 × 9	B32560-D3103-J	100				
15	2,1 × 5,5 × 9	B32560-D3153-J	100				
22	2,1 × 5,6 × 9	B32560-D3223-J	100				
33	2,4 × 6,1 × 9	B32560-D3333-J	100				
47	2,9 × 5,9 × 9	B32560-D3473-J	100				
68	3,6 × 6,7 × 9	B32560-D3683-J	100				
100	4,0 × 8,5 × 9	B32560-D3104-J	100				
V_R = 400 Vdc, V_{rms} = 200 Vac							
		Lead spacing $\boxed{e} = 7,5 \text{ mm}$	Capacitance tolerance $\pm 5 \%$				
1,0	2,0 × 6,0 × 9	B32560-D6102-J	100				
1,5	2,0 × 6,0 × 9	B32560-D6152-J	100				
2,2	2,1 × 7,6 × 9	B32560-D6222-J	100				
3,3	2,1 × 7,1 × 9	B32560-D6332-J	100				
4,7	2,1 × 7,1 × 9	B32560-D6472-J	100				
6,8	2,1 × 5,9 × 9	B32560-D6682-J	100				
10	2,1 × 5,9 × 9	B32560-D6103-J	100				
15	2,7 × 5,9 × 9	B32560-D6153-J	100				
B 32561							
$V_R = 100 \text{ Vdc}, V_{\text{rms}} = 63 \text{ Vac}$		Lead spacing $\boxed{e} = 10 \text{ mm}$	Capacitance tolerance $\pm 5 \%$				
220	3,3 × 5,8 × 11,5	B32561-D1224-J	100				
330	4,2 × 6,3 × 11,5	B32561-D1334-J	100				
470	5,1 × 6,9 × 11,5	B32561-D1474-J	100				
680	6,5 × 7,4 × 11,5	B32561-D1684-J	100				
1,0 μF	7,6 × 9,1 × 11,5	B32561-D1105-J	100				
V_R = 250 Vdc, V_{rms} = 160 Vac							
		Lead spacing $\boxed{e} = 10 \text{ mm}$	Capacitance tolerance $\pm 5 \%$				
33	2,4 × 4,9 × 11,5	B32561-D3333-J	100				
47	2,4 × 5,3 × 11,5	B32561-D3473-J	100				
68	2,9 × 5,8 × 11,5	B32561-D3683-J	100				
100	3,3 × 7,0 × 11,5	B32561-D3104-J	100				
150	4,2 × 7,6 × 11,5	B32561-D3154-J	100				
220	4,6 × 9,8 × 11,5	B32561-D3224-J	100				
V_R = 400 Vdc, V_{rms} = 200 Vac							
		Lead spacing $\boxed{e} = 10 \text{ mm}$	Capacitance tolerance $\pm 5 \%$				
10	2,4 × 4,6 × 11,5	B32561-D6103-J	100				
15	2,4 × 4,8 × 11,5	B32561-D6153-J	100				
22	2,4 × 6,4 × 11,5	B32561-D6223-J	100				
33	3,3 × 6,0 × 11,5	B32561-D6333-J	100				
47	3,8 × 6,9 × 11,5	B32561-D6473-J	100				

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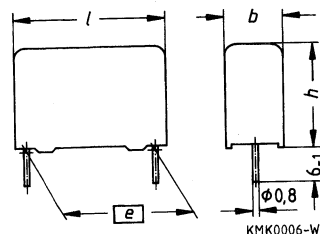


C _R nF	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max} mm	Ordering code	Min. qty.	Price per 100			
	Min. qty. +			250 +	500 +	1000 +	
B 32562							
V _R = 100 Vdc, V _{rms} = 63 Vac		Lead spacing e = 15 mm		Capacitance tolerance ± 5 %			
470	4,0 × 5,9 × 16,5	B32562-D1474-J	100				
680	4,7 × 6,6 × 16,5	B32562-D1684-J	100				
1,0 μF	5,2 × 8,7 × 16,5	B32562-E1105-J	100				
1,5 μF	7,0 × 8,9 × 16,5	B32562-E1155-J	100				
2,2 μF	7,3 × 12,3 × 16,5	B32562-E1225-J	100				
V _R = 250 Vdc, V _{rms} = 160 Vac		Lead spacing e = 15 mm		Capacitance tolerance ± 5 %			
330	5,2 × 7,6 × 16,5	B32562-D3334-J	100				
470	6,0 × 9,4 × 16,5	B32562-E3474-J	100				
680	7,0 × 11,0 × 16,5	B32562-E3684-J	100				
1,0 μF	9,5 × 11,5 × 16,5	B32562-E3105-J	100				
V _R = 400 Vdc, V _{rms} = 200 Vac		Lead spacing e = 15 mm		Capacitance tolerance ± 5 %			
68	3,8 × 6,2 × 16,5	B32562-D6683-J	100				
100	4,5 × 7,1 × 16,5	B32562-D6104-J	100				
150	5,5 × 8,2 × 16,5	B32562-E6154-J	100				
220	7,2 × 8,6 × 16,5	B32562-E6224-J	100				
330	8,3 × 10,9 × 16,5	B32562-E6334-J	100				

MKP Capacitors

Capacitor for high pulse loads Self-healing

Dielectric: polypropylene
Flame-retardant (UL 94 V-0) plastic case with epoxy resin sealing
Very low dissipation factors
For ac voltage applications, e.g. in video electronics, switch-mode power supplies, pulse and RF circuits



$e \pm 0,4$ mm	l_{max} mm
15,0	18,0
22,5	26,5
27,5	31,5

Rated voltage V_R
IEC climatic category
Reliability at 40 °C, 0,5 V_R
Dissipation factor $\tan \delta$, 20 °C
(upper limit values)

250 ... 1500 Vdc
55/085/56
 $2 \cdot 10^{-9}/h = 2 \text{ fit}$

	$> 0,1 \mu\text{F} \dots 1 \mu\text{F}$	$> 1 \mu\text{F}$
at 1 kHz	$0,5 \cdot 10^{-3}$	$0,5 \cdot 10^{-3}$
at 10 kHz	$0,8 \cdot 10^{-3}$	$1,5 \cdot 10^{-3}$

Rate of voltage rise $(dv/dt)_{max}$

20 ... 430 V/ μs

C_R nF	Dimensions $b_{max} \times h_{max} \times l_{max}$ mm	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +

B 32650

$V_R = 250 \text{ Vdc}$, $V_{rms} = 160 \text{ Vac}$ ($\leq 400 \text{ Hz}$)

Capacitance tolerance $\pm 5 \%$

330	$8,5 \times 14,5 \times 18,0$	B32650-L3334-J	25					
470	$7,0 \times 16,0 \times 26,5$	B32650-B3474-J	25					
680	$8,5 \times 16,5 \times 26,5$	B32650-L3684-J	20					
$1,0 \mu\text{F}$	$10,5 \times 16,5 \times 26,5$	B32650-L3105-J	20					
$1,5 \mu\text{F}$	$11,0 \times 21,0 \times 31,5$	B32650-L3155-J	20					
$2,2 \mu\text{F}$	$12,5 \times 21,5 \times 31,5$	B32650-L3225-J	10					
$\nabla 3,3 \mu\text{F}$	$18,0 \times 27,5 \times 31,5$	B32650-B3335-J	10					

$V_R = 400 \text{ Vdc}$, $V_{rms} = 200 \text{ Vac}$ ($\leq 400 \text{ Hz}$)

Capacitance tolerance $\pm 5 \%$

68	$5,0 \times 10,5 \times 18,0$	B32650-L4683-J	50					
100	$6,0 \times 11,0 \times 18,0$	B32650-B4104-J	50					
150	$7,0 \times 12,5 \times 18,0$	B32650-L4154-J	25					
220	$8,5 \times 14,5 \times 18,0$	B32650-L4224-J	25					
330	$7,0 \times 16,0 \times 26,5$	B32650-B4334-J	25					
470	$8,5 \times 16,5 \times 26,5$	B32650-L4474-J	25					
680	$10,5 \times 16,5 \times 26,5$	B32650-L4684-J	20					
$1,0 \mu\text{F}$	$11,0 \times 21,0 \times 31,5$	B32650-L4105-J	20					
$1,5 \mu\text{F}$	$12,5 \times 21,5 \times 31,5$	B32650-L4155-J	20					
$2,2 \mu\text{F}$	$14,0 \times 24,5 \times 31,5$	B32650-C4225-J	10					

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MKP Capacitors

CR	Dimensions	Ordering code	Min. qty.	Price each				
	$b_{max} \times h_{max} \times l_{max}$			Min. qty. +	50 +	100 +	250 +	500 +
nF	mm							

B 32655

$V_R = 630 \text{ Vdc}$, $V_{rms} = 250 \text{ Vac}$ ($\leq 1 \text{ kHz}$)

Capacitance tolerance $\pm 10 \%$

47	$5,0 \times 10,5 \times 18,0$	B32655-L6473-K	50					
68	$6,0 \times 11,0 \times 18,0$	B32655-L6683-K	50					
100	$7,0 \times 12,5 \times 18,0$	B32655-L6104-K	50					
150	$8,5 \times 14,5 \times 18,0$	B32655-L6154-K	50					
220	$8,5 \times 16,5 \times 26,5$	B32655-L6224-K	25					
330	$10,5 \times 16,5 \times 26,5$	B32655-B6334-K	25					
470	$11,0 \times 20,5 \times 26,5$	B32655-L6474-K	25					
680	$11,0 \times 21,0 \times 31,5$	B32655-L6684-K	20					
▽ 1,0 μF	$13,5 \times 23,0 \times 31,5$	B32655-C6105-K	20					

B 32650

$V_R = 1000 \text{ Vdc}$, $V_{rms} = 250 \text{ Vac}$ ($\leq 400 \text{ Hz}$)

Capacitance tolerance $\pm 5 \%$

22	$7,0 \times 12,5 \times 18,0$	B32650-B223-J	50					
33	$8,5 \times 14,5 \times 18,0$	B32650-L333-J	25					
47	$7,0 \times 16,0 \times 26,5$	B32650-B473-J	25					
68	$8,5 \times 16,5 \times 26,5$	B32650-L683-J	25					
100	$10,5 \times 16,5 \times 26,5$	B32650-L104-J	25					
150	$11,0 \times 20,5 \times 26,5$	B32650-L154-J	20					
220	$12,5 \times 21,5 \times 31,5$	B32650-L224-J	20					
▽ 330	$15,0 \times 24,5 \times 31,5$	B32650-C334-J	20					

B 32657

$V_R = 1000 \text{ Vdc}$, $V_{rms} = 400 \text{ Vac}$ ($\leq 1 \text{ kHz}$)

Capacitance tolerance $\pm 10 \%$

10	$6,0 \times 11,0 \times 18,0$	B32657-A103-K	50					
15	$7,0 \times 12,5 \times 18,0$	B32657-A153-K	50					
22	$8,5 \times 14,5 \times 18,0$	B32657-A223-K	50					
33	$7,0 \times 16,0 \times 26,5$	B32657-A333-K	25					
47	$8,5 \times 16,5 \times 26,5$	B32657-A473-K	25					
68	$10,5 \times 16,5 \times 26,5$	B32657-A683-K	25					
100	$11,0 \times 20,5 \times 26,5$	B32657-A104-K	25					
150	$12,5 \times 21,5 \times 31,5$	B32657-A154-K	20					
220	$14,0 \times 24,5 \times 31,5$	B32657-A224-K	20					
▽ 330	$18,0 \times 27,5 \times 31,5$	B32657-K334-K	20					

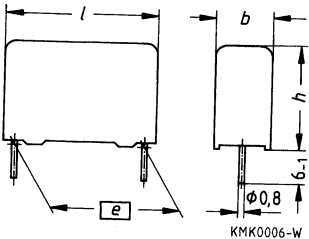
MKP Capacitors

C _R nF	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max} mm	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
B 32650				Capacitance tolerance ± 5 %				
V _R = 1200 Vdc, V _{rms} = 400 Vac (≤ 400 Hz)								
22	7,0 × 16,0 × 26,5	B32650-B2223-J	25					
33	8,5 × 16,5 × 26,5	B32650-L2333-J	25					
47	10,5 × 16,5 × 26,5	B32650-L2473-J	20					
68	11,0 × 21,0 × 31,5	B32650-L2683-J	20					
100	12,5 × 21,5 × 31,5	B32650-L2104-J	10					
▽ 150	15,0 × 24,5 × 31,5	B32650-C2154-J	10					
V _R = 1500 Vdc, V _{rms} = 500 Vac (≤ 400 Hz)				Capacitance tolerance ± 5 %				
1,0	6,0 × 15,0 × 26,5	B32650-L1102-J	25					
1,5	6,0 × 15,0 × 26,5	B32650-L1152-J	25					
2,2	6,0 × 15,0 × 26,5	B32650-L1222-J	25					
3,3	6,0 × 15,0 × 26,5	B32650-L1332-J	25					
4,7	6,0 × 15,0 × 26,5	B32650-L1472-J	25					
6,8	8,5 × 16,5 × 26,5	B32650-B1682-J	25					
10	10,5 × 16,5 × 26,5	B32650-L1103-J	25					
15	11,0 × 20,5 × 26,5	B32650-L1153-J	20					
22	11,0 × 21,0 × 31,5	B32650-L1223-J	20					
▽ 33	13,5 × 23,0 × 31,5	B32650-C1333-J	10					

MFP Capacitors

Capacitor for very high pulse loads; e.g. in circuits with high rates of voltage rise
Self-healing

Dielectric: polypropylene
Flame-retardant (UL 94 V-0) plastic case with epoxy resin sealing
Very low dissipation factors
For ac voltage applications



$e \pm 0,4$ mm	l_{max} mm	Type
15,0	18,0	B 32642
22,5	26,5	B 32643
27,5	31,5	B 32644

Rated voltage V_R
IEC climatic category
Reliability at 40 °C, 0,5 V_R
Dissipation factor $\tan \delta$, 20 °C
(upper limit value)

Rate of voltage rise $(dv/dt)_{max}$

1600 Vdc, 2000 Vdc
55/085/56
 $2 \cdot 10^{-9}/h = 2 \text{ fit}$

at 1 kHz: $0,3 \cdot 10^{-3}$
at 10 kHz: $0,4 \cdot 10^{-3}$
at 100 kHz: $1,5 \cdot 10^{-3}$
4000 ... 14000 V/ μ s

CR	Dimensions	Ordering code	Min. qty.	Price per 100				
	$b_{\max} \times h_{\max} \times l_{\max}$			Min. qty. +	100 +	250 +	500 +	
nF	mm							
B 32642				Capacitance tolerance $\pm 10 \%$				
$V_R = 1600 \text{ Vdc}$, $V_{rms} = 500 \text{ Vac}$ ($\leq 1 \text{ kHz}$)				Lead spacing $[e] = 15 \text{ mm}$				
100 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1101-K	50					
150 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1151-K	50					
220 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1221-K	50					
330 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1331-K	50					
470 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1471-K	50					
680 pF	$5,0 \times 10,5 \times 18,0$	B32642-C1681-K	50					
B 32643				Capacitance tolerance $\pm 10 \%$				
$V_R = 1600 \text{ Vdc}$, $V_{rms} = 500 \text{ Vac}$ ($\leq 1 \text{ kHz}$)				Lead spacing $[e] = 22,5 \text{ mm}$				
1,0	$6,0 \times 15,0 \times 26,5$	B32643-C1102-K	50					
1,5	$6,0 \times 15,0 \times 26,5$	B32643-C1152-K	50					
2,2	$6,0 \times 15,0 \times 26,5$	B32643-C1222-K	50					
3,3	$7,0 \times 16,0 \times 26,5$	B32643-B1332-K	50					
4,7	$8,5 \times 16,5 \times 26,5$	B32643-C1472-K	50					
6,8	$10,5 \times 16,5 \times 26,5$	B32643-C1682-K	50					
10	$11,0 \times 20,5 \times 26,5$	B32643-B1103-K	50					

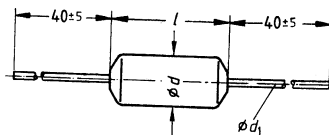
MFP Capacitors

C _R	Dimensions <i>b</i> _{max} × <i>h</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100			
				Min. qty. +	100 +	250 +	500 +
nF	mm						
B 32644 V _R = 1600 Vdc, V _{rms} = 500 Vac (≤ 1 kHz)				Capacitance tolerance ± 10 % Lead spacing [e] = 27,5 mm			
15	11,0 × 21,0 × 31,5	B32644-C1153-K	50				
22	12,5 × 21,5 × 31,5	B32644-C1223-K	50				
B 32643 V _R = 2000 Vdc, V _{rms} = 600 Vac (≤ 1 kHz)				Capacitance tolerance ± 10 % Lead spacing [e] = 22,5 mm			
1,0	6,0 × 15,0 × 26,5	B32643-C2102-K	50				
1,5	6,0 × 15,0 × 26,5	B32643-C2152-K	50				
2,2	7,0 × 16,0 × 26,5	B32643-C2222-K	50				
3,3	8,5 × 16,5 × 26,5	B32643-C2332-K	50				
B 32644 V _R = 2000 Vdc, V _{rms} = 600 Vac (≤ 1 kHz)				Capacitance tolerance ± 10 % Lead spacing [e] = 27,5 mm			
4,7	11,0 × 21,0 × 31,5	B32644-C2472-K	50				
6,8	11,0 × 21,0 × 31,5	B32644-C2682-K	50				
10	11,0 × 21,0 × 31,5	B32644-C2103-K	50				

MKL (MKU) Capacitors

Long-life grade capacitor For universal application. Self-healing.

Dielectric: cellulose acetate
Metal cartridge with insulating sleeve,
face ends epoxy-resin-sealed



KMK0013 - E

Dimensions in mm

$\varnothing d$	$\leq 7,4$	$\geq 8,4$
$\varnothing d_1$	0,6	0,8

Rated voltage V_R
IEC climatic category
Reliability at 40 °C, 0,5 V_R

25 ... 250 Vdc
55/085/56
 $1 \cdot 10^{-9}/h = 1 \text{ fit}$

Dissipation factor $\tan \delta$, 20 °C
(upper limit values)

	$\leq 1,0 \mu F$	$> 1,0 \mu F$
at 1 kHz	—	$20 \cdot 10^{-3}$
at 10 kHz	$36 \cdot 10^{-3}$	—

Rate of voltage rise $(dv/dt)_{\max}$

1 ... 11,5 V/ μs

C_R	Dimensions $d_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price each				
μF	mm			Min. qty. +	20 +	50 +	100 +	250 +
$V_R = 25 \text{ Vdc}, V_{\text{rms}} = 10 \text{ Vac}$								
Capacitance tolerance $\pm 20 \%$								
0,47	$5,4 \times 18,5$	B32110-D3474-M	5					
0,68	$6,4 \times 18,5$	B32110-D3684-M	5					
1,0	$7,4 \times 18,5$	B32110-D3105-M	5					
1,5	$7,4 \times 18,5$	B32110-D3155-M	5					
2,2	$7,4 \times 21,0$	B32110-D3225-M	5					
3,3	$8,4 \times 21,0$	B32110-D3335-M	5					
4,7	$9,4 \times 21,0$	B32110-D3475-M	5					
6,8	$10,7 \times 25,0$	B32110-K3685-M	5					
10,0	$11,7 \times 25,0$	B32110-D3106-M	1					
$V_R = 63 \text{ Vdc}, V_{\text{rms}} = 20 \text{ Vac}$								
Capacitance tolerance $\pm 20 \%$								
0,15	$5,4 \times 18,5$	B32110-F9154-M	10					
0,22	$5,4 \times 18,5$	B32110-F9224-M	10					
0,33	$6,4 \times 18,5$	B32110-F9334-M	10					
0,47	$7,4 \times 18,5$	B32110-F9474-M	10					
0,68	$7,4 \times 18,5$	B32110-F9684-M	10					
1,0	$7,4 \times 21,0$	B32110-F9105-M	10					
1,5	$8,4 \times 21,0$	B32110-F9155-M	5					
2,2	$10,7 \times 21,0$	B32110-F9225-M	5					
3,3	$9,4 \times 25,0$	B32110-F9335-M	5					
4,7	$10,7 \times 25,0$	B32110-F9475-M	5					
6,8	$10,7 \times 34,0$	B32110-F9685-M	5					
10,0	$12,7 \times 34,0$	B32110-F9106-M	5					

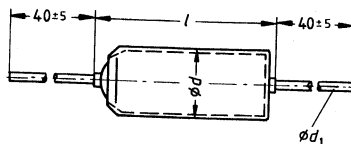
MKL (MKU) Capacitors

C _R	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
				Min. qty. +	20 +	50 +	100 +	250 +
μF	mm							
$V_R = 100 \text{ Vdc}, V_{rms} = 35 \text{ Vac}$				Capacitance tolerance $\pm 20 \%$				
0,10	5,4 × 18,5	B32110-E104-M	10					
0,15	6,4 × 18,5	B32110-E154-M	10					
0,22	6,4 × 18,5	B32110-E224-M	10					
0,33	7,4 × 18,5	B32110-E334-M	5					
0,47	7,4 × 21,0	B32110-E474-M	5					
0,68	8,4 × 21,0	B32110-E684-M	5					
1,0	9,4 × 21,0	B32110-E105-M	5					
1,5	9,4 × 25,0	B32110-E155-M	5					
2,2	10,7 × 25,0	B32110-E225-M	5					
3,3	9,4 × 34,0	B32110-E335-M	5					
4,7	11,7 × 34,0	B32110-E475-M	5					
6,8	12,7 × 34,0	B32110-E685-M	5					
10,0	16,7 × 34,0	B32110-E106-M	1					
$V_R = 160 \text{ Vdc}, V_{rms} = 60 \text{ Vac}$				Capacitance tolerance $\pm 20 \%$				
0,10	6,4 × 18,5	B32110-E1104-M	5					
0,15	7,4 × 18,5	B32110-E1154-M	5					
0,22	7,4 × 21,0	B32110-E1224-M	5					
0,33	8,4 × 21,0	B32110-E1334-M	5					
0,47	9,4 × 21,0	B32110-E1474-M	5					
0,68	9,4 × 25,0	B32110-E1684-M	5					
1,0	10,7 × 25,0	B32110-E1105-M	5					
1,5	12,7 × 25,0	B32110-E1155-M	5					
2,2	11,7 × 34,0	B32110-E1225-M	5					
3,3	13,7 × 34,0	B32110-E1335-M	5					
4,7	15,7 × 34,0	B32110-E1475-M	5					
6,8	18,7 × 34,0	B32110-E1685-M	5					
10,0	20,7 × 34,0	B32110-E1106-M	1					
$V_R = 250 \text{ Vdc}, V_{rms} = 90 \text{ Vac}$				Capacitance tolerance $\pm 20 \%$				
0,10	7,4 × 18,5	B32110-E2104-M	5					
0,15	8,4 × 18,5	B32110-E2154-M	5					
0,22	8,4 × 21,0	B32110-E2224-M	5					
0,33	9,4 × 21,0	B32110-E2334-M	5					
0,47	10,7 × 21,0	B32110-E2474-M	5					
0,68	10,7 × 25,0	B32110-E2684-M	5					
1,0	11,7 × 25,0	B32110-E2105-M	5					
1,5	13,7 × 25,0	B32110-E2155-M	5					
2,2	12,7 × 34,0	B32110-E2225-M	5					
3,3	15,7 × 34,0	B32110-E2335-M	5					
4,7	17,7 × 34,0	B32110-E2475-M	5					
6,8	20,7 × 34,0	B32110-E2685-M	1					
10,0	25,9 × 34,0	B32110-E2106-M	1					

MKL (MKU) Capacitors

Long-life grade capacitor Self-healing

Dielectric: cellulose acetate
Hermetically sealed metal cartridge
with insulating sleeve
For high climatic stress



KMK0014-M

Dimensions in mm

$\varnothing d$	$\leq 8,2$	$\geq 11,2$
$\varnothing d_1$	0,6	0,8

Rated voltage V_R 63 Vdc, 100 Vdc
IEC climatic category 55/085/56
Reliability at 40 °C, 0,5 V_R $1 \cdot 10^{-9}/h = 1$ fit

Dissipation factor $\tan \delta$, 20 °C
(upper limit values)

	$\leq 1,0 \mu F$	$> 1,0 \mu F$
at 1 kHz	—	$20 \cdot 10^{-3}$
at 10 kHz	$36 \cdot 10^{-3}$	—

Rate of voltage rise $(dv/dt)_{max}$

1,2 ... 6,5 V/ μs

C_R	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
μF	mm			Min. qty. +	20 +	50 +	100 +	250 +

$V_R = 63$ Vdc, $V_{rms} = 20$ Vac

Capacitance tolerance $\pm 20 \%$

0,22	6,2 × 21,0	B32120-F9224-M	5					
0,33	6,9 × 21,0	B32120-E9334-M	5					
0,47	8,2 × 21,0	B32120-E9474-M	5					
1,0	8,2 × 25,0	B32120-E9105-M	5					
2,2	11,2 × 25,0	B32120-E9225-M	5					
3,3	11,2 × 29,0	B32120-E9335-M	5					
4,7	11,2 × 29,0	B32120-E9475-M	5					
10,0	15,0 × 39,0	B32120-E9106-M	1					

$V_R = 100$ Vdc, $V_{rms} = 35$ Vac

Capacitance tolerance $\pm 20 \%$

0,10	6,2 × 21,0	B32120-E104-M	5					
0,22	6,9 × 21,0	B32120-D224-M	5					
0,33	8,2 × 21,0	B32120-D334-M	5					
0,47	8,2 × 25,0	B32120-D474-M	5					
1,0	11,2 × 25,0	B32120-D105-M	5					
2,2	11,2 × 29,0	B32120-D225-M	5					
3,3	11,2 × 39,0	B32120-D335-M	5					
4,7	11,2 × 39,0	B32120-D475-M	5					
10,0	16,5 × 39,0	B32120-D106-M	1					

Aluminum Electrolytic Capacitors

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Further technical literature

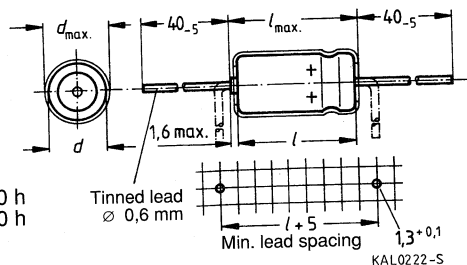
Data Book "Aluminum and Tantalum Electrolytic Capacitors", B4-P2702-X-X-7600
Short Form Catalog "High-Performance Electrolytic Capacitors", B4-P2704-X-X-7600

Aluminum Electrolytic Capacitors

General-purpose grade capacitor Standard version for universal application

Al case with insulating sleeve
Welded terminals ensure reliable contacting
Operation up to 105 °C¹⁾ permissible

Rated voltage V_R 6,3 ... 100 Vdc
IEC climatic category 40/085/56
Operational life
40 °C; V_R ; /acR > 70 000 h
85 °C; V_R ; /acR > 3 000 h



CR	V_R ²⁾	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100			
					Min. qty. +	250 +	500 +	1000 +
μF	Vdc	mm			Capacitance tolerance – 10 % ... + 50 %			
470	6,3	9,0 × 19,0	B41283-C2477-T	100				
1000	6,3	10,5 × 26,5	B41283-A2108-T	100				
100	10	7,0 × 19,0	B41283-B3107-T	100				
220	10	9,0 × 19,0	B41283-C3227-T	100				
470	10	10,5 × 21,5	B41283-A3477-T	100				
100	16	9,0 × 19,0	B41283-B4107-T	100				
220	16	9,0 × 19,0	B41283-B4227-T	100				
470	16	10,5 × 26,5	B41283-A4477-T	100				
47	25	7,0 × 19,0	B41283-B5476-T	100				
100	25	9,0 × 19,0	B41283-B5107-T	100				
220	25	10,5 × 21,5	B41283-B5227-T	100				
22	40	7,0 × 19,0	B41283-B7226-T	100				
47	40	9,0 × 19,0	B41283-D7476-T	100				
100	40	10,5 × 21,5	B41283-B7107-T	100				
220	40	10,5 × 26,5	B41283-A7227-T	100				
10	63	7,0 × 19,0	B41283-A8106-T	100				
22	63	9,0 × 19,0	B41283-C8226-T	100				
47	63	9,0 × 19,0	B41283-C8476-T	100				
100	63	10,5 × 26,5	B41283-A8107-T	100				
4,7	100	7,0 × 19,0	B41283-A9475-T	100				
10	100	9,0 × 19,0	B41283-J9106-T	100				
22	100	9,0 × 19,0	B41283-C9226-T	100				
47	100	10,5 × 26,5	B41283-A9476-T	100				

1) Operation at 105 °C with 0,6 /ac max 85 °C is permissible for a total of 1500 h for $\varnothing \leq 9$ mm; 2500 h are permissible for $\varnothing 10,5$ mm, respectively.

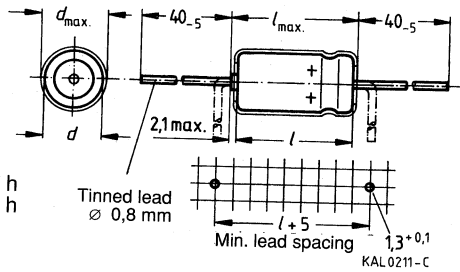
2) Peak voltage $V_p = 1,15 V_R$

Aluminum Electrolytic Capacitors

General-purpose grade capacitor Standard version for universal application

Al case with insulating sleeve
Welded terminals ensure reliable contacting
Operation up to 105 °C¹⁾ permissible

Rated voltage V_R 6,3 ... 100 Vdc
IEC climatic category 40/085/56
Operational life
40 °C; V_R ; /acr > 90 000 h
85 °C; V_R ; /acr > 4 000 h



C _R	V _{R2})	Dimensions <i>d</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100			
μF	Vdc	mm			Min. qty. +	100 +	250 +	500 +
Capacitance tolerance – 10 % ... + 50 %								
2 200	6,3	12,5 × 32	B41010-B2228-T	50				
4 700	6,3	16,5 × 32	B41010-E2478-T	50				
1 000	10	12,5 × 32	B41010-A3108-T	50				
2 200	10	14,5 × 32	B41010-C3228-T	50				
4 700	10	18,5 × 41,5	B41010-C3478-T	25				
10 000	10	25,5 × 41,5	B41010-C3109-T	15				
1 000	16	12,5 × 32	B41010-B4108-T	50				
2 200	16	16,5 × 32	B41010-E4228-T	50				
4 700	16	21,5 × 41,5	B41010-C4478-T	20				
470	25	12,5 × 32	B41010-B5477-T	50				
1 000	25	14,5 × 32	B41010-C5108-T	50				
2 200	25	18,5 × 41,5	B41010-C5228-T	25				
4 700	25	25,5 × 41,5	B41010-C5478-T	20				
470	40	12,5 × 32	B41010-B7477-T	50				
1 000	40	16,5 × 32	B41010-E7108-T	50				
2 200	40	21,5 × 41,5	B41010-C7228-T	20				
220	63	12,5 × 32	B41010-B8227-T	50				
470	63	16,5 × 32	B41010-D8477-T	50				
1 000	63	21,5 × 41,5	B41010-B8108-T	20				
100	100	12,5 × 32	B41010-B9107-T	50				
220	100	16,5 × 32	B41010-E9227-T	50				
470	100	21,5 × 41,5	B41010-B9477-T	20				

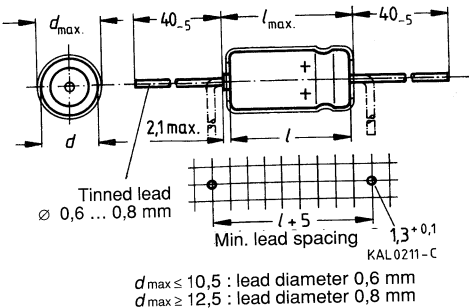
¹⁾ Operation at 105 °C with 0,6 /ac max 85 °C is permissible for a total of 2500 h.
²⁾ Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

General-purpose grade capacitor Standard version for universal application

Al case with insulating sleeve
Welded terminals ensure reliable contacting
Operation up to 105 °C¹⁾ permissible

Rated voltage V_R 160 ... 350 Vdc
IEC climatic category 40/085/56
Operational life
 40 °C; V_R ;
 /acR > 70 000 h
 85 °C; V_R ;
 /acR > 3 000 h



C_R μF	$V_R^{2)}$ Vdc	Dimensions $d_{max} \times l_{max}$ mm	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	100 +	250 +	500 +	1000 +
B43283					Capacitance tolerance – 10 % ... + 50 %				
10	160	10,5 × 21,5	B43283-B1106-T	50					
1	350	7,0 × 19,0	B43283-E4105-T	50					
2,2	350	9,0 × 19,0	B43283-C4225-T	50					
4,7	350	10,5 × 21,5	B43283-C4475-T	50					

C_R μF	V_R 2) Vdc	Dimensions $d_{max} \times l_{max}$ mm	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	100 +	250 +	500 +	
B43050					Capacitance tolerance – 10 % ... + 50 %				
47	160	14,5 × 32,0	B43050-C1476-T	50					
100	160	18,5 × 41,5	B43050-E1107-T	25					
22	250	12,5 × 32,0	B43050-C2226-T	50					
47	250	16,5 × 32,0	B43050-D2476-T	25					
10	350	12,5 × 32,0	B43050-B4106-T	50					
22	350	14,5 × 32,0	B43050-D4226-T	50					
47	350	18,5 × 41,5	B43050-C4476-T	20					

1) Operation at 105 °C with 0,6 /ac max 85 °C is permissible for a total of 1500 h for $\varnothing \leq 9 \text{ mm}$; 2500 h are permissible for $\varnothing \geq 10,5 \text{ mm}$, respectively.
2) Peak voltage $V_P \leq 250 \text{ V}$; 1,15 V_R ; 350 V : 1,1 V_R

Aluminum Electrolytic Capacitors

General-purpose grade capacitor Standard version for universal application

Metal case with insulating sleeve
Single-ended, 5-mm lead spacing

Rated voltage V_R 16 ... 350 Vdc
IEC climatic category 40/085/56 (≤ 100 V)
25/085/56 (> 100 V)

Tape packaging in acc. with IEC 286-2; supply

on reels (positive pole ahead):

B41327-/B43327-E★★★★-M9;

in AMMO pack:

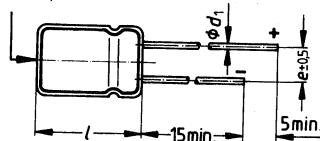
B41327-/B43327-A★★★★-M8;

untaped:

B41327-/B43327-A★★★★-M



Safety vent for
 $\varnothing \geq 6,3$



$l \leq 16 : l + 1,0$ max.

$l \geq 20 : l + 2,0$ max.

$e = 5$ mm

KAL0208-S

$\varnothing d$	5	6,3	8	10	12,5
$\varnothing d_1$	0,5	0,5	0,6	0,6	0,6

C_R	V_R	Dimensions $d \times l$	Ordering code	Min. qty.	Price per 100				
μF	Vdc	mm			Min. qty. +	100 +	500 +	1000 +	5000 +

Capacitance tolerance $\pm 20\%$

▼ 10	16	5 × 11	B41327-E4106-M9	600					
▼ 22	16	5 × 11	B41327-E4226-M9	600					
▼ 33	16	5 × 11	B41327-E4336-M9	500					
▼ 47	16	5 × 11	B41327-E4476-M9	500					
▼ 100	16	6,3 × 11,2	B41327-E4107-M9	400					
▼ 220	16	8 × 11,5	B41327-E4227-M9	300					
▼ 330	16	8 × 12,5	B41327-E4337-M9	200					
▼ 470	16	10 × 12,5	B41327-A4477-M8	200					
▼ 1000	16	10 × 20	B41327-A4108-M8	150					
▼ 2200	16	12,5 × 25	B41327-A4228-M	50					
▼ 10	25	5 × 11	B41327-E5106-M9	600					
▼ 22	25	5 × 11	B41327-E5226-M9	500					
▼ 33	25	5 × 11	B41327-E5336-M9	400					
▼ 47	25	5 × 11	B41327-E5476-M9	400					
▼ 100	25	6,3 × 11,2	B41327-E5107-M9	300					
▼ 220	25	8 × 12,5	B41327-E5227-M9	200					
▼ 330	25	10 × 12,5	B41327-A5337-M8	200					
▼ 470	25	10 × 16	B41327-A5477-M8	150					
▼ 1000	25	12,5 × 20	B41327-A5108-M8	60					
▼ 10	63	5 × 11	B41327-E8106-M9	400					
▼ 22	63	6,3 × 11,2	B41327-E8226-M9	300					
▼ 33	63	6,3 × 11,2	B41327-E8336-M9	300					
▼ 47	63	8 × 11,5	B41327-E8476-M9	300					
▼ 100	63	10 × 12,5	B41327-A8107-M8	200					
▼ 220	63	10 × 20	B41327-A8227-M8	100					
▼ 330	63	12,5 × 20	B41327-A8337-M8	60					
▼ 470	63	12,5 × 25	B41327-A8477-M	50					

Aluminum Electrolytic Capacitors

C _R	V _R	Dimensions <i>d × l</i>	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	100 +	500 +	1000 +	5000 +
μF	Vdc	mm							
Capacitance tolerance ± 20 %									
▼ 0,47	100	5 × 11	B41327-E9474-M9	500					
▼ 1	100	5 × 11	B41327-E9105-M9	500					
▼ 2,2	100	5 × 11	B41327-E9225-M9	500					
▼ 3,3	100	5 × 11	B41327-E9335-M9	500					
▼ 4,7	100	5 × 11	B41327-E9475-M9	400					
▼ 10	100	6,3 × 11,2	B41327-E9106-M9	300					
▼ 22	100	8 × 11,5	B41327-E9226-M9	300					
▼ 33	100	10 × 12,5	B41327-A9336-M8	200					
▼ 47	100	10 × 16	B41327-A9476-M8	150					
▼ 100	100	12,5 × 20	B41327-A9107-M8	70					
▼ 1	350	6,3 × 11,2	B43327-E4105-M9	200					
▼ 2,2	350	10 × 12,5	B43327-A4225-M8	150					
▼ 3,3	350	10 × 16	B43327-A4335-M8	150					
▼ 4,7	350	10 × 16	B43327-A4475-M8	100					
▼ 10	350	10 × 20	B43327-A4106-M8	60					
▼ 22	350	12,5 × 25	B43327-A4226-M	40					

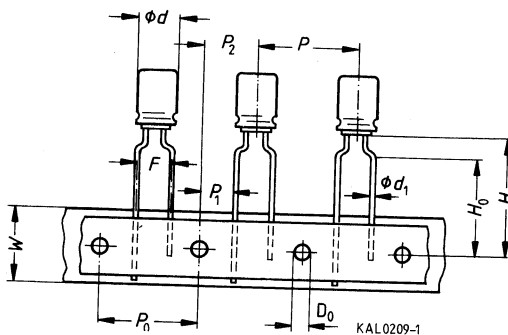
Aluminum Electrolytic Capacitors

General-purpose grade capacitor Uniform height 7⁺¹ mm

Metal case with insulating sleeve
Single-ended, 5-mm lead spacing

Rated voltage V_R 16 ... 50 Vdc
IEC climatic category 40/085/56

Tape packaging in acc. with IEC 286-2;
supply on $\varnothing 370$ -mm reels
(positive pole ahead)



Symbol	Dimension	Tolerance	Symbol	Dimension	Tolerance
W	18,0	$\pm 0,5$	P	12,7	$\pm 1,0$
H	17,5	$\pm 0,75$	P_0	12,7	$\pm 0,2$
H_0	16,0	$\pm 0,5$	P_1	3,85	$\pm 0,5$
$\varnothing D_0$	4,0	$\pm 0,2$	P_2	6,35	$\pm 1,0$
F	5,0	$\pm 0,8$	$\varnothing d_1$	0,45	$\pm 0,05$

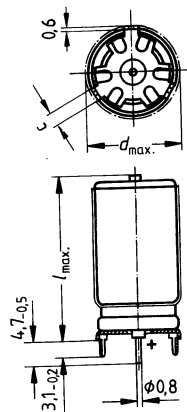
C_R	V_R	Dimensions $d \times l$	Ordering code	Min. qty.	Price per 100			
μF	Vdc	mm			Min. qty. +	500 +	1000 +	5000 +
▼ 10	16	4 × 7	B41329-E4106-M9	400				
▼ 22	16	4 × 7	B41329-E4226-M9	400				
▼ 33	16	5 × 7	B41329-E4336-M9	300				
▼ 47	16	5 × 7	B41329-E4476-M9	300				
▼ 100	16	6,3 × 7	B41329-E4107-M9	200				
▼ 4,7	25	4 × 7	B41329-E5475-M9	400				
▼ 10	25	4 × 7	B41329-E5106-M9	400				
▼ 22	25	5 × 7	B41329-E5226-M9	300				
▼ 33	25	6,3 × 7	B41329-E5336-M9	300				
▼ 47	25	6,3 × 7	B41329-E5476-M9	300				
▼ 0,1	50	4 × 7	B41329-E6104-M9	400				
▼ 0,22	50	4 × 7	B41329-E6224-M9	400				
▼ 0,33	50	4 × 7	B41329-E6334-M9	400				
▼ 0,47	50	4 × 7	B41329-E6474-M9	400				
▼ 1	50	4 × 7	B41329-E6105-M9	400				
▼ 2,2	50	4 × 7	B41329-E6225-M9	400				
▼ 3,3	50	4 × 7	B41329-E6335-M9	400				
▼ 4,7	50	4 × 7	B41329-E6475-M9	300				
▼ 10	50	5 × 7	B41329-E6106-M9	300				
▼ 22	50	6,3 × 7	B41329-E6226-M9	300				
▼ 33	50	8 × 7	B41329-E6336-M9	200				

Aluminum Electrolytic Capacitors

General-purpose grade capacitor For automotive, entertainment and industrial electronics

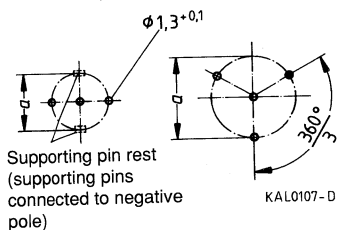
Al case with insulating sleeve
Mounting socket with solder pins
Operation up to 105 °C¹⁾ permissible

Rated voltage V_R 16 ... 63 Vdc
IEC climatic category 40/085/56
Operational life 40 °C; V_R ;
/ac_R > 90 000 h
85 °C; V_R ;
/ac_R > 4 000 h



Mounting holes

$d_{max} = 13,5$ and $15,5$ $d_{max} = 17,5$... $26,5$



d_{max}	13,5	15,5	17,5	19,5	22,5	26,5
$a \pm 0,1$	12,5	14,5	16,5	18,5	21,5	25,5
$c \pm 0,1$	3				3,5	

C _R	V _R 2)	Dimensions d _{max} × l _{max}	Ordering code	Min. qty.	Price per 100				
	V _{dc}	mm			Min. qty. +	100 +	250 +	500 +	
μF					Capacitance tolerance – 10 % ... + 50 %				
2 200	16	17,5 × 33	B41293-B4228-T	25					
4 700	16	22,5 × 42	B41293-A4478-T	20					
470	25	13,5 × 33	B41293-A5477-T	30					
1 000	25	15,5 × 33	B41293-J5108-T	25					
2 200	25	19,5 × 42	B41293-J5228-T	20					
4 700	25	26,5 × 42	B41293-B5478-T	15					
470	40	13,5 × 33	B41293-J7477-T	30					
1 000	40	17,5 × 33	B41293-B7108-T	25					
2 200	40	22,5 × 42	B41293-B7228-T	20					
220	63	13,5 × 33	B41293-J8227-T	30					
470	63	17,5 × 33	B41293-B8477-T	25					
1 000	63	22,5 × 42	B41293-A8108-T	20					

- Operation at 105 °C with 0,6 /ac max 85 °C is permissible for a total of 1000 h.
- Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

General-purpose-grade capacitor
For switch-mode power supplies
in consumer electronics
High ripple current capability

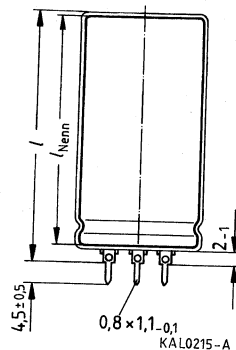
Al case, fully insulated
 Solder pins fit standardized lead spacing
 Pinning ensures correct insertion

Rated voltage V_R 16 ... 385 Vdc

IEC climatic category 40/085/56

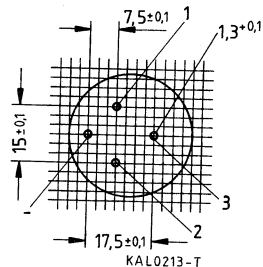
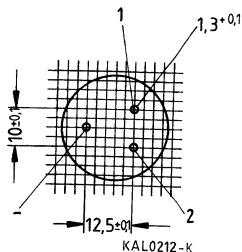
Operational life

B41306 **B43306**
 40 °C; V_R ; /acR > 90 000 h > 70 000 h
 85 °C; V_R ; /acR > 4 000 h > 3 000 h



$d_{max} = 25,8 \text{ mm}$

$d_{max} = 30,8 \text{ mm and } 35,8 \text{ mm}$



Marking: Positive pole: 1
 Negative pole: -
 (Negative pole not insulated from case)

Mounting holes (view from solder side)

CR	V_R 1)	Dimensions $d_{max} \times l_{max}$ mm	Ordering code	Min. qty.	Price each				
μF	Vdc				Min. qty. +	20 +	50 +	100 +	250 +
B 41306									
Capacitance tolerance -10 % ... + 50 %									
4 700	16	25,8 × 34	B41306-F4478-T	10					
10 000	16	30,8 × 44	B41306-E4109-T	10					
22 000	16	30,8 × 74	B41306-E4229-T	5					
2 200	40	30,8 × 44	B41306-E7228-T	10					
4 700	40	30,8 × 44	B41306-E7478-T	10					
10 000	40	30,8 × 54	B41306-F7109-T	5					
1 000	63	25,8 × 44	B41306-E8108-T	10					
2 200	63	30,8 × 44	B41306-E8228-T	10					
4 700	63	35,8 × 54	B41306-E8478-T	5					
B 43306									
Capacitance tolerance - 10 % ... + 50 %									
100	350	30,8 × 44	B43306-E4107-T	10					
220	350	30,8 × 54	B43306-E4227-T	10					
150	385	30,8 × 44	B43306-E157-T	10					
220	385	30,8 × 54	B43306-E227-T	10					

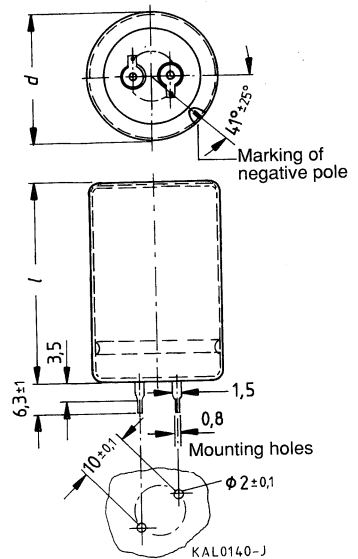
1) Peak voltage $V_P = 1,15 V_R$ for up to 63 Vdc and 1,1 V_R for ≥ 350 Vdc.

Aluminum Electrolytic Capacitors

General-purpose grade capacitor For switch-mode power supplies in industrial and entertainment electronics

Al case, fully insulated
Snap-in solder pins provide
secure locking to PC board
All-welded construction
Uniform 10-mm lead spacing
High CV product at small dimensions

Rated voltage V_R 10 ... 385 Vdc
IEC climatic category 40/085/56
Operational life
40 °C; V_R ;
/acR > 40 000 h
85 °C; V_R ;
/acR > 2 000 h



C _R	V _R 1)	Rated dimensions <i>d × l</i>	Ordering code	Min. qty.	Price each				
	V _{dc}				mm	Min. qty. +	20 +	50 +	100 +
μF									
B 41303					Capacitance tolerance ± 20 %				
10 000	16	25 × 30	B41303-J4109-M	10					
22 000	16	30 × 35	B41303-B4229-M	5					
4 700	25	25 × 25	B41303-J5478-M	10					
10 000	25	30 × 30	B41303-J5109-M	8					
22 000	25	30 × 45	B41303-B5229-M	4					
3 300	40	25 × 25	B41303-J7338-M	10					
4 700	40	25 × 30	B41303-J7478-M	10					
6 800	40	30 × 30	B41303-J7688-M	8					
10 000	40	30 × 35	B41303-B7109-M	5					
15 000	40	30 × 50	B41303-A7159-M	4					
2 200	63	25 × 30	B41303-J8228-M	10					
3 300	63	30 × 30	B41303-J8338-M	8					
4 700	63	30 × 35	B41303-B8478-M	4					
6 800	63	30 × 45	B41303-B8688-M	4					
1 000	100	25 × 30	B41303-J9108-M	10					
2 200	100	30 × 35	B41303-B9228-M	5					
3 300	100	30 × 45	B41303-B9338-M	4					

cont'd on page 288

1) Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

C _R μF	V _R 1)	Rated dimensions <i>d × l</i> mm	Ordering code	Min. qty.	Price each				
	Vdc				Min. qty. +	20 +	50 +	100 +	250 +
B 43303					Capacitance tolerance ± 20 %				
220	200	22 × 25	B43303-B227-M	10					
330	200	25 × 25	B43303-K337-M	10					
470	200	30 × 25	B43303-K477-M	8					
680	200	30 × 35	B43303-J687-M	5					
1 000	200	30 × 45	B43303-B108-M	4					
68	385	22 × 25	B43303-F686-M	10					
100	385	22 × 30	B43303-F107-M	10					
100	385	25 × 25	B43303-P107-M	10					
150	385	22 × 40	B43303-F157-M	10					
150	385	25 × 30	B43303-P157-M	10					
220	385	25 × 40	B43303-F227-M	8					
220	385	30 × 35	B43303-N227-M	8					
330	385	30 × 45	B43303-F337-M	6					

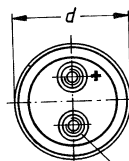
1) Peak voltage $V_p = 1,15 V_R$ for $V_R = 200 \text{ Vdc}$; $1,1 V_R$ for $V_R = 385 \text{ Vdc}$

Aluminum Electrolytic Capacitors

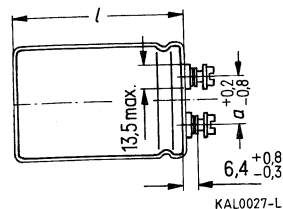
General-purpose grade capacitor In accordance with DIN 41 250 For professional power supply units and SMPS

Al case with insulating sleeve
Mounting by ring clips¹⁾
Poles brought out to M5
screw terminals²⁾

Rated voltage V_R 16 ... 100 Vdc
IEC climatic category 40/085/56
Operational life
40 °C; V_R ;
/acR > 110 000 h
85 °C; V_R ;
/acR > 45 000 h



Min. reach of screw 8 mm



KAL0027-L

$d_{max} \times l_{max}$ (with insulating sleeve) mm	$d_{max} \times l_{max}$ (with insulating sleeve) mm	a mm
35,7 × 56,7	34,9 × 53,5	12,7
35,7 × 82,1	34,9 × 78,9	12,7
51,6 × 82,1	50,8 × 78,9	22,2
64,3 × 82,1	63,5 × 78,9	28,5
64,3 × 107,5	63,5 × 104,3	28,5

C_R	$V_R^{3)}$	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +	
Capacitance tolerance – 10 % ... + 50 %									
10 000	16	35,7 × 56,7	B41455-N4109-T	5					
22 000	16	35,7 × 82,1	B41455-P4229-T	5					
47 000	16	51,6 × 82,1	B41455-P4479-T	2					
100 000	16	64,3 × 82,1	B41455-P4100-T	1					
4 700	40	35,7 × 56,7	B41455-N7478-T	5					
10 000	40	35,7 × 82,1	B41455-P7109-T	5					
22 000	40	51,6 × 82,1	B41455-P7229-T	2					
47 000	40	64,3 × 107,5	B41455-P7479-T	1					
2 200	63	35,7 × 56,7	B41455-N8228-T	5					
4 700	63	35,7 × 82,1	B41455-P8478-T	5					
10 000	63	51,6 × 82,1	B41455-P8109-T	2					
22 000	63	64,3 × 107,5	B41455-N8229-T	1					
1 000	100	35,7 × 56,7	B41455-N9108-T	5					
2 200	100	35,7 × 82,1	B41455-N9228-T	5					
4 700	100	51,6 × 82,1	B41455-P9478-T	2					
10 000	100	64,3 × 107,5	B41455-N9109-T	1					

¹⁾ Mounting and insulating parts upon request (refer to page 303).

²⁾ Cylindrical screws M 5 × 8 DIN 84–4,8 and toothed washers A 5,1 DIN 6797 are included in delivery.

³⁾ Peak voltage $V_P = 1,15 V_R$

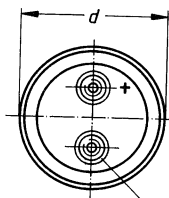
Aluminum Electrolytic Capacitors

General-purpose grade capacitor For professional power supply units and SMPS

Al case with insulating sleeve
Poles brought out to M5 screw
terminals, with $d_{\max} = 76,9$ mm to
M6 screw terminals²⁾
Mounting by ring clips³⁾ (B43455)
or by threaded bolts (B43457)

Very small dimensions
All-welded construction
ensures reliable contacting

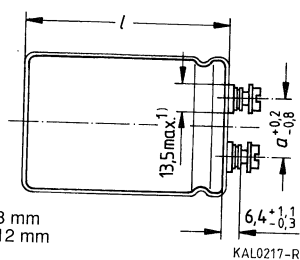
Rated voltage V_R 350 Vdc, 400 Vdc
IEC climatic category 40/085/56
Operational life 40 °C; V_R /acR > 70 000 h
85 °C; V_R /acR > 3 000 h



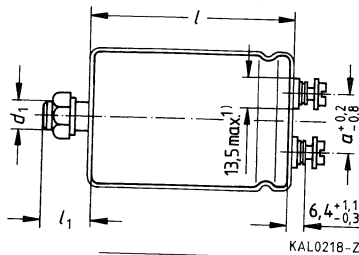
M5: Min. reach of screw 8 mm
M6: Min. reach of screw 12 mm

Marking of
positive pole: +

B43455



B43457



$d_{\max}$	d_1	/1-1	Dim. a
51,6	M12	17	22,2
64,3	M12	17	28,5
76,9	M12	17	31,7

C_R	V_R 4)	Dimensions $d_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price each			
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +
B 43455 Capacitance tolerance – 10 % ... + 50 %								
1 000	350	51,6 × 107,5	B43455-A4108-T	2				
1 500	350	64,3 × 107,5	B43455-A4158-T	1				
2 200	350	64,3 × 107,5	B43455-J4228-T	1				
3 300	350	76,9 × 107,5	B43455-B4338-T	1				
6 000	350	76,9 × 145,6	B43455-S4608-T5	1				
B 43457 Capacitance tolerance – 10 % ... + 50 %								
1 000	400	51,6 × 107,5	B43457-E108-T	1				
1 500	400	64,3 × 107,5	B43457-E158-T	1				
2 200	400	76,9 × 107,5	B43457-E228-T	1				
3 300	400	76,9 × 145,6	B43457-E338-T	1				
6 000	400	76,9 × 221,8	B43457-T608-T1	1				

1) 17,7 mm max. for M6 screw terminals.

2) Cylindrical screws and toothed washers for the terminals as well as hex nuts and toothed washers for the threaded bolt are included in delivery (loosely).

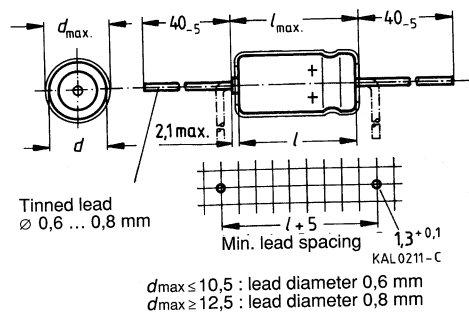
3) Ring clips and insulating parts upon request (refer to page 303).

4) Peak voltage $V_P = 1,1 V_R$

Aluminum Electrolytic Capacitors

Long-life grade capacitor For professional equipment in industrial electronics

Al case with insulating sleeve
Welded terminals ensure
reliable contacting
Operation up to 105 °C¹⁾ permissible



Rated voltage V_R 10 ... 350 Vdc
IEC climatic category 40/085/56
Operational life

B41588 **B43588**
40 °C; V_R/aCR > 220 000 h > 180 000 h
85 °C; V_R/aCR > 10 000 h > 8 000 h

C_R	V_R ²⁾	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	50 +	100 +	250 +	
μF	Vdc	mm							
B 41588					Capacitance tolerance – 10 % ... + 50 %				
47	10	7,0 × 19	B41588-C3476-T	50					
220	10	10,5 × 21,5	B41588-D3227-T	50					
47	16	9,0 × 19	B41588-B4476-T	50					
100	16	9,0 × 19	B41588-C4107-T	50					
220	16	10,5 × 26,5	B41588-C4227-T	50					
470	16	12,5 × 32	B41588-D4477-T	25					
1 000	16	16,5 × 32	B41588-M4108-T	20					
2 200	16	18,5 × 41,5	B41588-D4228-T	20					
47	25	9,0 × 19	B41588-C5476-T	50					
100	25	10,5 × 21,5	B41588-D5107-T	50					
220	25	12,5 × 32	B41588-L5227-T	25					
470	25	14,5 × 32	B41588-E5477-T	20					
1 000	25	18,5 × 41,5	B41588-D5108-T	20					
10	40	7,0 × 19	B41588-C7106-T	50					
22	40	9,0 × 19	B41588-C7226-T	50					
47	40	9,0 × 19	B41588-D7476-T	50					
100	40	10,5 × 26,5	B41588-D7107-T	30					
220	40	12,5 × 32	B41588-D7227-T	25					
470	40	16,5 × 32	B41588-M7477-T	20					
1 000	40	21,5 × 41,5	B41588-D7108-T	10					

cont'd on page 292

¹⁾ Operation at 105 °C is permissible for a total of 1500 h for $\varnothing \leq 9,0$ mm; 2500 h are permissible for $\varnothing \geq 10,5$ mm, respectively.
²⁾ Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

CR	V _R 1)	Dimensions <i>d</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price per 100				
	V _{dc}	mm			Min. qty. +	50 +	100 +	250 +	
μF									
B 41588									
Capacitance tolerance – 10 % ... + 50 %									
4,7	63	7,0 × 19	B41588-J8475-T	50					
10	63	9,0 × 19	B41588-J8106-T	50					
22	63	9,0 × 19	B41588-J8226-T	50					
47	63	10,5 × 26,5	B41588-J8476-T	25					
100	63	12,5 × 32	B41588-J8107-T	25					
220	63	16,5 × 32	B41588-B8227-T	20					
470	63	21,5 × 41,5	B41588-J8477-T	10					
4,7	100	9,0 × 19	B41588-B9475-T	50					
10	100	9,0 × 19	B41588-C9106-T	30					
22	100	10,5 × 26,5	B41588-C9226-T	30					
47	100	12,5 × 32	B41588-D9476-T	25					
100	100	16,5 × 32	B41588-E9107-T	20					
220	100	18,5 × 41,5	B41588-D9227-T	15					
470	100	25,5 × 41,5	B41588-A9477-T	10					
B 43588									
Capacitance tolerance – 10 % ... + 50 %									
2,2	250	9,0 × 19	B43588-B2225-T	25					
4,7	250	10,5 × 21,5	B43588-B2475-T	25					
10	250	10,5 × 26,5	B43588-C2106-T	20					
22	250	14,5 × 32	B43588-D2226-T	15					
47	250	16,5 × 32	B43588-M2476-T	10					
100	250	21,5 × 41,5	B43588-D2107-T	10					
1	350	7,0 × 19	B43588-C4105-T	25					
2,2	350	9,0 × 19	B43588-C4225-T	25					
4,7	350	10,5 × 21,5	B43588-C4475-T	25					
10	350	12,5 × 32	B43588-D4106-T	20					
22	350	14,5 × 32	B43588-E4226-T	15					
47	350	18,5 × 41,5	B43588-D4476-T	10					

1) Peak voltage V_p = 1,15 V_R for up to 250 V_{dc}; V_p = 1,1 V_R for 350 V_{dc}

Aluminum Electrolytic Capacitors

Long-life grade capacitor For professional applications

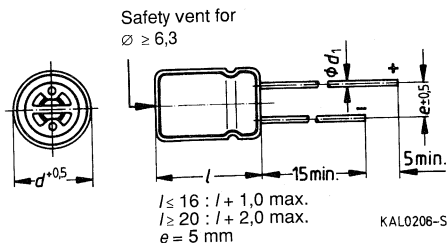
Metal case with insulating sleeve
Single-ended, 5-mm lead spacing

Rated voltage V_R 16 ... 63 Vdc
IEC climatic category 55/105/56

Tape packaging in acc. with IEC 286-2; supply
on reel (positive pole ahead):
B41526-E★★★★-M9;

in AMMO pack:
B41526-A★★★★-M★8;

untaped:
B41526-A★★★★-M



$\varnothing d$	6,3	8	10	12,5
$\varnothing d_1$	0,5	0,6	0,6	0,6

C_R	V_R	Dimensions $d \times l$	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	100 +	500 +	1000 +	5000 +
μF	Vdc	mm							
Capacitance tolerance $\pm 20\%$									

▼ 330	16	8 × 15	B41526-A4337-M	70					
▼ 470	16	8 × 20	B41526-A4477-M	60					
▼ 680	16	10 × 20	B41526-A4687-M8	50					
▼ 1500	16	12,5 × 25	B41526-A4158-M	40					
▼ 2200	16	12,5 × 30	B41526-A4228-M	30					
▼ 3300	16	12,5 × 40	B41526-A4338-M	20					
▼ 220	25	8 × 15	B41526-A5227-M	70					
▼ 330	25	8 × 20	B41526-A5337-M	60					
▼ 470	25	12,5 × 15	B41526-A5477-M18	50					
▼ 1000	25	12,5 × 25	B41526-A5108-M	40					
▼ 1500	25	12,5 × 30	B41526-A5158-M	30					
▼ 2200	25	12,5 × 40	B41526-A5228-M	20					
▼ 22	63	6,3 × 11,2	B41526-E8226-M9	150					
▼ 100	63	8 × 20	B41526-A8107-M	60					
▼ 150	63	10 × 20	B41526-A8157-M8	50					
▼ 220	63	12,5 × 20	B41526-A8227-M8	40					
▼ 330	63	12,5 × 25	B41526-A8337-M	40					
▼ 470	63	12,5 × 35	B41526-A8477-M	20					

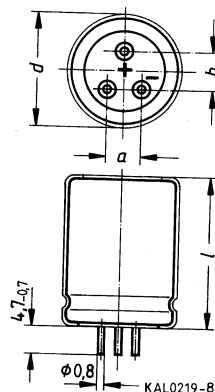
Aluminum Electrolytic Capacitors

Long-life grade capacitor For compact, professional switch-mode power supplies

Al case with insulating sleeve
Pinning ensures correct insertion
Low equivalent series resistance
High ripple current capability
Operation up to 105 °C¹⁾ permissible
Case length 30 mm

Rated voltage V_R 6,3 ... 100 Vdc
IEC climatic category 40/085/56
Operational life 40 °C; V_R ; /acR > 180 000 h
85 °C; V_R ; /acR > 8 000 h

d_{max}	$a \pm 0,4$ $-0,2$	$b \pm 0,4$ $-0,2$
22,8	7,5	10
25,8	7,5	10



CR μF	V _R 2) Vdc	Dimensions <i>d</i> _{max} × <i>l</i> _{max} mm	Ordering code	Min. qty.	Price each				
	Min. qty. +	20 +			50 +	100 +	250 +		
Capacitance tolerance ± 20 %									
6 800	6,3	22,8 × 30,5	B41534-J2688-M	5					
10 000	6,3	25,8 × 30,5	B41534-J2109-M	5					
4 700	10	22,8 × 30,5	B41534-J3478-M	5					
6 800	10	25,8 × 30,5	B41534-J3688-M	5					
3 300	16	22,8 × 30,5	B41534-J4338-M	5					
4 700	16	25,8 × 30,5	B41534-J4478-M	5					
1 500	25	22,8 × 30,5	B41534-J5158-M	5					
2 200	25	25,8 × 30,5	B41534-J5228-M	5					
1 000	40	22,8 × 30,5	B41534-J7108-M	5					
1 500	40	25,8 × 30,5	B41534-J7158-M	5					
470	63	22,8 × 30,5	B41534-J8477-M	5					
680	63	25,8 × 30,5	B41534-J8687-M	5					
220	100	22,8 × 30,5	B41534-J9227-M	5					
330	100	25,8 × 30,5	B41534-J9337-M	5					

¹⁾ Operation at 105 °C is permissible for a total of 1000 h.
²⁾ Peak voltage $V_P = 1,15 V_R$

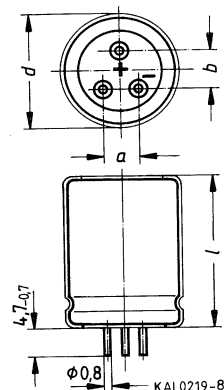
Aluminum Electrolytic Capacitors

Long-life grade capacitor For switch-mode power supplies with high clock frequencies

Al case with insulating sleeve
Solder pins fit standardized lead spacing
Pinning ensures correct insertion
Low-self inductance
Operation up to 105 °C¹⁾ permissible

Rated voltage V_R 6,3 ... 100 Vdc
IEC climatic category 40/085/56
Operational life 40 °C; V_R ; /aCR > 180 000 h
85 °C; V_R ; /aCR > 8 000 h

d_{max}	$a^{+0,4}_{-0,2}$	$b^{+0,4}_{-0,2}$
18,8	5	7,5
22,8	7,5	10
25,8	7,5	10



C_R	V_R 2)	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +	
Capacitance tolerance – 10 % ... + 50 %									
4 700	6,3	18,8 × 30,5	B41336-A2478-T	5					
6 800	6,3	18,8 × 40,5	B41336-A2688-T	5					
10 000	6,3	22,8 × 40,5	B41336-A2109-T	5					
15 000	6,3	25,8 × 40,5	B41336-A2159-T	5					
3 300	10	18,8 × 30,5	B41336-A3338-T	5					
4 700	10	18,8 × 40,5	B41336-A3478-T	5					
6 800	10	22,8 × 40,5	B41336-A3688-T	5					
10 000	10	25,8 × 40,5	B41336-A3109-T	5					
1 500	16	18,8 × 30,5	B41336-A4158-T	5					
2 200	16	18,8 × 30,5	B41336-A4228-T	5					
3 300	16	18,8 × 40,5	B41336-A4338-T	5					
4 700	16	22,8 × 40,5	B41336-A4478-T	5					
6 800	16	25,8 × 40,5	B41336-A4688-T	5					
1 000	25	18,8 × 30,5	B41336-A5108-T	5					
1 500	25	18,8 × 40,5	B41336-A5158-T	5					
2 200	25	22,8 × 40,5	B41336-A5228-T	5					
3 300	25	25,8 × 40,5	B41336-A5338-T	5					
4 700	25	25,8 × 40,5	B41336-A5478-T	5					

cont'd on page 296

1) Operation at 105 °C is permissible for a total of 1000 h.
2) Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

CR	V _{R1})	Dimensions <i>d</i> _{max} × <i>l</i> _{max}	Ordering code	Min. qty.	Price each				
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +	
Capacitance tolerance – 10 % ... + 50 %									
470	40	18,8 × 30,5	B41336-A7477-T	5					
680	40	18,8 × 30,5	B41336-A7687-T	5					
1000	40	18,8 × 40,5	B41336-A7108-T	5					
1500	40	22,8 × 40,5	B41336-A7158-T	5					
2200	40	25,8 × 40,5	B41336-A7228-T	5					
220	63	18,8 × 30,5	B41336-A8227-T	5					
330	63	18,8 × 30,5	B41336-A8337-T	5					
470	63	18,8 × 40,5	B41336-A8477-T	5					
680	63	22,8 × 40,5	B41336-A8687-T	5					
1000	63	25,8 × 40,5	B41336-A8108-T	5					
100	100	18,8 × 30,5	B41336-A9107-T	5					
150	100	18,8 × 30,5	B41336-A9157-T	5					
220	100	18,8 × 40,5	B41336-A9227-T	5					
330	100	22,8 × 40,5	B41336-A9337-T	5					
470	100	25,8 × 40,5	B41336-A9477-T	5					

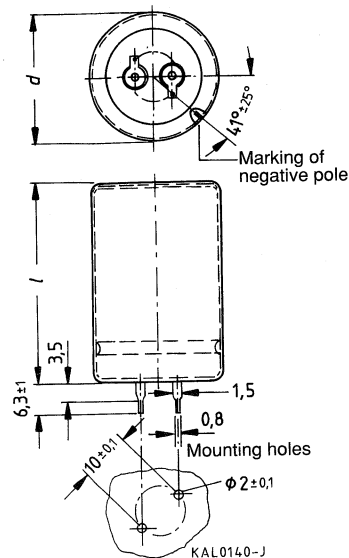
¹⁾ Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

Long-life grade capacitor For professional switch-mode power supplies in industrial electronics and EDP systems

Al case, fully insulated
Snap-in solder pins provide
secure locking to PC board
All-welded construction
Uniform 10-mm lead spacing
Excellent reliability
High ripple current capability

Rated current V_R 200 Vdc, 400 Vdc
IEC climatic category 40/105/56
Operational life 40 °C; $V_R/aCR >$ 220 000 h
85 °C; $V_R/aCR >$ 4 000 h
105 °C; $V_R/aCR >$ 2 500 h



C _R	V _R 1)	Rated dimensions <i>d × l</i>	Ordering code	Min. qty.	Price each				
	μF	Vdc			mm	Min. qty. +	20 +	50 +	100 +
Capacitance tolerance ± 20 %									
220	200	25 × 25	B43503-K227-M	8					
330	200	25 × 30	B43503-K337-M	6					
470	200	30 × 30	B43503-J477-M	5					
680	200	30 × 35	B43503-B687-M	4					
47	400	22 × 25	B43503-F476-M	8					
68	400	22 × 30	B43503-F686-M	6					
68	400	25 × 25	B43503-P686-M	6					
100	400	22 × 35	B43503-F107-M	6					
100	400	25 × 30	B43503-P107-M	6					
150	400	25 × 40	B43503-F157-M	5					
150	400	30 × 30	B43503-N157-M	5					
220	400	30 × 40	B43503-F227-M	5					
330	400	30 × 50	B43503-E337-M	4					

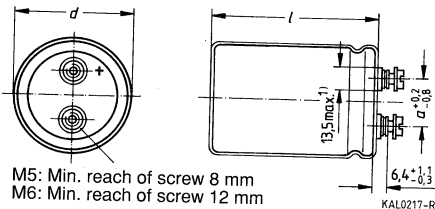
1) Peak voltage $V_P = 1,15 V_R$ for $V_R = 200$ Vdc; $1,1 V_R$ for $V_R = 400$ Vdc

Aluminum Electrolytic Capacitors

Long-life grade capacitor In accordance with DIN 41 248 For industrial electronics and switch-mode power supplies

Al case with insulating sleeve
Mounting by ring clips²⁾
Poles brought out to M5 screw
terminals, with $\varnothing 76,9$ to M6
screw terminals³⁾

Rated voltage V_R 16 ... 100 Vdc
IEC climatic category 40/085/56
Operational life 40 °C; V_R ; /acR > 180 000 h
85 °C; V_R ; /acR > 8 000 h



Marking of positive pole: +

d_{max}	35,7	51,6	64,3	76,9
a	12,7	22,2	28,5	31,7

C_R	V_R 4)	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +	
Capacitance tolerance – 10 % ... + 30 %									
10 000	16	35,7 × 56,7	B41564-A4109-Q	5					
22 000	16	35,7 × 82,1	B41564-B4229-Q	2					
47 000	25	64,3 × 107,5	B41564-A5479-Q	1					
4 700	40	35,7 × 82,1	B41564-A7478-Q	5					
10 000	40	35,7 × 107,5	B41564-A7109-Q	2					
22 000	40	51,6 × 107,5	B41564-A7229-Q	2					
47 000	40	76,9 × 107,5	B41564-B7479-Q	1					
2 200	63	35,7 × 56,7	B41564-A8228-Q	5					
4 700	63	35,7 × 107,5	B41564-A8478-Q	2					
10 000	63	51,6 × 82,1	B41564-B8109-Q	2					
22 000	63	64,3 × 107,5	B41564-J8229-Q	1					
1 000	100	37,5 × 56,7	B41564-A9108-Q	5					
2 200	100	35,7 × 82,1	B41564-A9228-Q	5					
4 700	100	51,6 × 107,5	B41564-A9478-Q	2					
10 000	100	64,3 × 107,5	B41564-A9109-Q	1					

¹⁾ 17,7 mm max. for M6 screw terminals.

²⁾ Mounting and insulating parts upon request (refer to page 303).

³⁾ Included in delivery (loosely): For $\varnothing 35,7$ to $\varnothing 64,3$: cylindrical screws M5 × 8 DIN 84-4.8; toothed washers A 5,1 DIN 6797. For $\varnothing 76,9$: cylindrical screws M6 × 12 DIN 85-4.8; toothed washers A 6,4 DIN 6797.

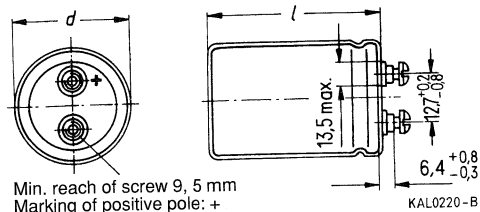
⁴⁾ Peak voltage $V_p = 1,15 V_R$

Aluminum Electrolytic Capacitors

Long-life grade capacitor SIKOREL® SMPS For switch-mode power supplies with high clock frequencies

Al case with insulating sleeve
Mounting by ring clips¹⁾

Poles brought out to screw terminals²⁾



Rated voltage V_R	7,5 ... 55 Vdc
IEC climatic category	55/105/56
Operational life	40 °C; V_R ; /acR > 180 000 h
	85 °C; V_R ; /acR > 4 500 h
	105 °C; V_R ; /acR > 2 000 h

C_R	V_R ³⁾	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	20 +	50 +	
μF	Vdc	mm							
Capacitance tolerance $\pm 20\%$									
15 000	7,5	35,7 × 56,7	B41431-D159-M	5					
27 000	7,5	35,7 × 82,1	B41431-D279-M	2					
10 000	16	35,7 × 56,7	B41431-A4109-M	5					
18 000	16	35,7 × 82,1	B41431-A4189-M	2					
6 300	28	35,7 × 56,7	B41431-K638-M	5					
11 000	28	35,7 × 82,1	B41431-K119-M	2					
4 500	35	35,7 × 56,7	B41431-A7458-M	5					
8 100	35	35,7 × 82,1	B41431-A7818-M	2					
2 800	55	35,7 × 56,7	B41431-N288-M	5					
5 000	55	35,7 × 82,1	B41431-N508-M	2					

¹⁾ Mounting and insulating parts upon request (refer to page 303).

²⁾ Screws 10-32 UNF-2A × 9,5 and toothed washers A5,1 DIN 6797 are included in delivery (loosely).

³⁾ Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

SIKOREL® 105

For professional power supply units

Al case with insulating sleeve

Mounting by ring clips¹⁾

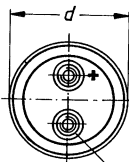
Poles brought out to M5

screw terminals²⁾

High ripple current capability

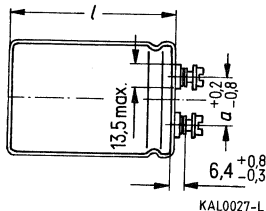
Operation up to 125 °C³⁾ permissible

Up to 10 years shelf life



Min. reach of screw 8 mm

Marking of positive pole: +



KAL0027-L

d_{max}	35,7	51,6	76,9
a	12,7	22,2	31,7

Rated voltage V_R 16 ... 100 Vdc

IEC climatic category 55/105/56

$d_{max} \leq 51,6 \text{ mm}$ | $d_{max} = 76,9 \text{ mm}$

Operational life	40 °C; V_R ; /acR	> 500 000 h	> 500 000 h
	85 °C; V_R ; /acR	> 15 000 h	> 25 000 h
	105 °C; V_R ; /acR	> 10 000 h	> 20 000 h

CR	V_R 4)	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	20 +	50 +	
μF	Vdc	mm							
Capacitance tolerance – 10 % ... + 30 %									
10 000	16	35,7 × 56,7	B41550-A4109-Q	5					
22 000	16	35,7 × 107,5	B41550-A4229-Q	2					
4 700	40	35,7 × 82,1	B41550-A7478-Q	5					
10 000	40	35,7 × 107,5	B41550-A7109-Q	2					
22 000	40	51,6 × 107,5	B41550-A7229-Q	1					
2 200	63	35,7 × 56,7	B41550-A8228-Q	5					
4 700	63	35,7 × 107,5	B41550-A8478-Q	2					
10 000	63	51,6 × 107,5	B41550-A8109-Q	2					
1 000	100	35,7 × 56,7	B41550-A9108-Q	5					
2 200	100	35,7 × 82,1	B41550-A9228-Q	3					
4 700	100	51,6 × 107,5	B41550-A9478-Q	2					
10 000	100	76,9 × 107,5	B41550-A9109-Q	1					

¹⁾ Mounting and insulating parts upon request (refer to page 303).

²⁾ Cylindrical screws M5 × 8 DIN 84-4,8 and toothed washers A 5,1 DIN 6797 are included in delivery.

³⁾ After removal of insulating sleeve operation up to 125 °C is permissible: For $\varnothing \leq 51,6 \text{ mm}$: 2500 h; for $\varnothing 76,9 \text{ mm}$: 5000 h.

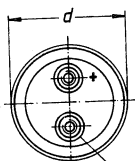
⁴⁾ Peak voltage $V_p = 1,15 V_R$

Aluminum Electrolytic Capacitors

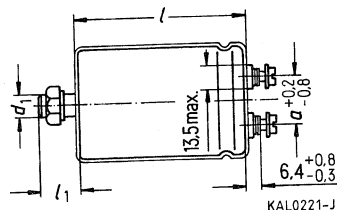
SIKOREL® 105

For professional power supply units

Al case with insulating sleeve
Mounting by threaded bolts¹⁾
Poles brought out to M5
screw terminals¹⁾
High ripple current capability
Operation up to 125 °C²⁾ permissible
Up to 10 years shelf life



Min. reach of screw 8 mm
Marking of positive pole: +



KAL0221-J

$d_{\max}$ mm	d_1	l_{1-1}	a mm
35,7	M 8	13	12,7
51,6	M 12	17	22,2
76,9	M 12	17	31,7

Rated voltage V_R 16 ... 100 Vdc
IEC climatic category 55/105/56

Operational life

40 °C; V_R ; /acR
85 °C; V_R ; /acR
105 °C; V_R ; /acR

$d_{\max} \leq 51,6$ mm	$d_{\max} = 76,9$ mm
> 500 000 h	> 500 000 h
> 15 000 h	> 25 000 h
> 10 000 h	> 20 000 h

C_R μF	V_R 3)	Dimensions $d_{max} \times l_{max}$	Ordering code	Min. qty.	Price each				
	Vdc	mm			Min. qty. +	10 +	20 +	50 +	
Capacitance tolerance – 10 % ... + 30 %									
10 000	16	35,7 × 56,7	B41570-A4109-Q	5					
22 000	16	35,7 × 107,5	B41570-A4229-Q	2					
4 700	40	35,7 × 82,1	B41570-A7478-Q	5					
10 000	40	35,7 × 107,5	B41570-A7109-Q	2					
22 000	40	51,6 × 107,5	B41570-A7229-Q	1					
2 200	63	35,7 × 56,7	B41570-A8228-Q	5					
4 700	63	35,7 × 107,5	B41570-A8478-Q	2					
10 000	63	51,6 × 107,5	B41570-A8109-Q	1					
1 000	100	35,7 × 56,7	B41570-A9108-Q	5					
2 200	100	35,7 × 82,1	B41570-A9228-Q	3					
4 700	100	51,6 × 107,5	B41570-A9478-Q	1					
10 000	100	76,9 × 107,5	B41570-A9109-Q	1					

- Cylindrical screws M5 × 8 DIN 84-4,8 and toothed washers A 5,1 DIN 6797 for the terminals as well as hex nuts and toothed washers for the threaded bolt are included in delivery (loosely).
Insulating parts upon request (refer to page 304).
- After removal of insulating sleeve operation up to 125 °C is permissible: For $\varnothing \leq 51,5$ mm: 2500 h; for $\varnothing 76,9$ mm: 5000 h.
- Peak voltage $V_P = 1,15 V_R$

Aluminum Electrolytic Capacitors

High-performance capacitor For professional power supply units and power electronics

Al case with insulating sleeve
Poles brought out to M5 screw
terminals, with $d_{\max} = 76,9$ mm to M6
screw terminals²⁾

Mounting by ring clips³⁾ (B43550)

or by threaded bolts (B43570)

High ripple current capability

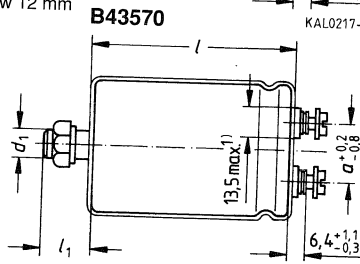
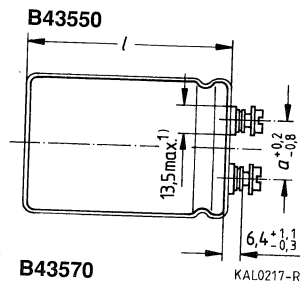
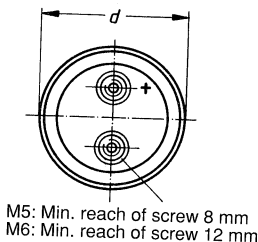
All-welded construction
ensures reliable contacting

Rated voltage V_R 350 and 400 Vdc

IEC climatic category 350 Vdc: 40/105/56

400 Vdc: 40/085/56

Marking of
positive pole: +



Operational
life

	$V_R = 350$ Vdc	$V_R = 400$ Vdc
40 °C; V_R/aCR	> 360 000 h	> 180 000 h
85 °C; V_R/aCR	> 10 000 h	> 8 000 h
105 °C; V_R/aCR	> 4 000 h	—

$d_{\max}$	d_1	l_1	Dim. a
51,6	M 12	17	22,2
64,3	M 12	17	28,5
76,9	M 12	17	31,7

C_R	V_R 4)	Dimensions $d_{\max} \times l_{\max}$	Ordering code	Min. qty.	Price each			
μF	Vdc	mm			Min. qty. +	10 +	20 +	50 +

B 43550

Capacitance tolerance – 10 % ... + 30 %

3300	350	76,9 × 145,6	B43550-B4338-Q	1				
4700	350	76,9 × 221,8	B43550-B4478-Q	1				
6000	350	76,9 × 221,8	B43550-B4608-Q	1				

B 43570

Capacitance tolerance – 10 % ... + 30 %

1000	350	64,3 × 107,5	B43570-A4108-Q	1				
1500	350	64,3 × 107,5	B43570-A4158-Q	1				
2200	350	76,9 × 107,5	B43570-B4228-Q	1				
6000	350	76,9 × 221,8	B43570-B4608-Q	1				
680	400	51,6 × 107,5	B43570-E687-Q	1				
1000	400	64,3 × 107,5	B43570-E108-Q	1				
1500	400	64,3 × 107,5	B43570-E158-Q	1				
2200	400	76,9 × 107,5	B43570-F228-Q	1				
3300	400	76,9 × 145,6	B43570-F338-Q	1				
4700	400	76,9 × 221,8	B43570-F478-Q	1				

¹⁾ 17,7 mm max. for M6 screw terminals.

²⁾ Cylindrical screws and toothed washers for the terminals as well as hex nuts and toothed washers for the threaded bolt are included in delivery (loosely).

³⁾ Ring clips and insulating parts upon request (refer to page 303).

⁴⁾ Peak voltage $V_P = 1,1 V_R$

Aluminum Electrolytic Capacitors

Mounting parts

Ring clips for can-type capacitors B44030

Capacitor diameter	Spacing of mounting holes	Length of insulating strip	Ordering code	Price each
mm	mm	mm		1 +

For non-insulated mounting

25	35	—	B44030-A25	
30	40	—	B44030-A30	
35	45	—	B44030-A35	
35,7	46,02	—	B44030-A36	
40	50	—	B44030-A40	
50	60	—	B44030-A50	
51,6	¹⁾	—	B44030-A51	
64,3	¹⁾	—	B44030-A64	
76,9	¹⁾	—	B44030-A75	

For insulated mounting (with insulating strips)

25	35,0	170	B44030-J25	
30	40,4	200	B44030-J30	
35	45,4	230	B44030-J35	
40	50,0	260	B44030-J40	
50	60,4	325	B44030-J50	

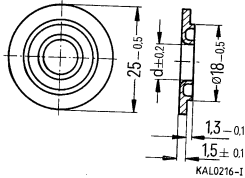
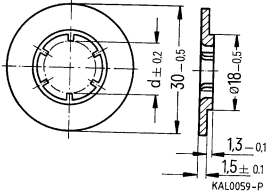
¹⁾ Clips are fixed at 3 points. For details refer to Data Book "Aluminum and Tantalum Electrolytic Capacitors".

Aluminum Electrolytic Capacitors

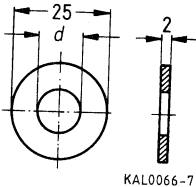
Accessories as per DIN 41331 for can-type capacitors with threaded bolt at the case bottom

Capacitor diameter	Outline drawing	Ordering code	Price each
			1 +

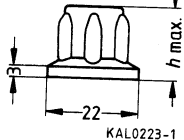
Insulating connecting washer P

25 ... 40 Dimension $d = 8,5 \text{ mm}$		B44020-B1-B25	
50 ... 75 Dimension $d = 12,5 \text{ mm}$		B44020-B2-B30	

Insulating washer N

25 ... 40 Dimension $d = 8,4 \text{ mm}$		B44020-A1-B25	
50 ... 75 Dimension $d = 13 \text{ mm}$		B44020-A2-B25	

Plastic cap nut V

25 ... 40 Dimension $h_{\text{max}} = 14 \text{ mm}$		B44020-B5-B8	
50 ... 75 Dimension $h_{\text{max}} = 18 \text{ mm}$		B44020-A5-B12	

Tantalum Electrolytic Capacitors

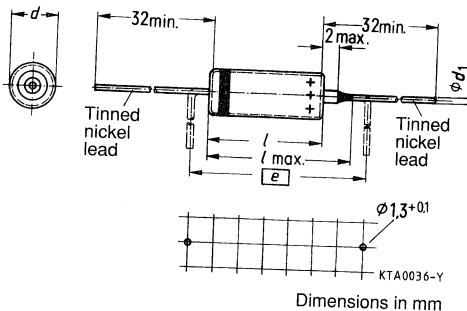
Contents	Type	Page
Capacitors with axial leads	B 45170	306
Capacitors with radial leads	B 45181	308
Chip capacitors »SMD«	B 45196	310
Bead capacitors with radial leads	B 45810	312
▼ Newly included in this edition		
Bead capacitors with radial leads	B 45810	312

Further technical literature

Data Book "Aluminum and Tantalum Electrolytic Capacitors", B4-P2701-X-X-7600
Short Form Catalog "Tantalum Chip Capacitors SMD", B4-P6701-X-X-7400

Long-life grade capacitor For professional applications

Quality approval as per CECC 30201-001,
CECC 30201-019, CECC 30201-029
Sintered slug version, solid
Metal case with insulating sleeve
Hermetically sealed, for high climatic
stress
Tape packaging in acc. with IEC 286-1
Rated voltage V_R 6,3 ... 80 Vdc
IEC climatic category 55/125/56
Operational life > 500 000 h
Failure rate $\leq 5 \text{ fit } (\leq 5 \cdot 10^{-9}/\text{h})$



Size	$d \pm 0,4$	$l \pm 0,8$	l_{max}	e	$d_1 \pm 0,05$
A	3,4	7,2	10,7	12,5	0,5
B	4,7	12,0	15,4	17,5	0,5
C	7,3	17,3	20,8	22,5	0,6
D	8,9	20,0	23,4	25,0	0,6

C_R	V_R 1)	Dimensions $d \times l$	Ordering code	Min. qty.	Price per 100				
μF	Vdc	mm			Min. qty. +	50 +	100 +	250 +	500 +
Capacitance tolerance $\pm 20 \%$									
6,8	6,3	$3,4 \times 7,2$	B45170-A685-M9	70					
47	6,3	$4,7 \times 12,0$	B45170-A476-M9	50					
330	6,3	$8,9 \times 20,0$	B45170-A337-M9	5					
4,7	10	$3,4 \times 7,2$	B45170-A1475-M9	70					
33	10	$4,7 \times 12,0$	B45170-A1336-M9	50					
100	10	$7,3 \times 17,3$	B45170-A1107-M9	15					
220	10	$8,9 \times 20,0$	B45170-A1227-M9	5					
3,3	16	$3,4 \times 7,2$	B45170-E2335-M9	70					
22	16	$4,7 \times 12,0$	B45170-E2226-M9	50					
68	16	$7,3 \times 17,3$	B45170-E2686-M9	15					
150	16	$8,9 \times 20,0$	B45170-E2157-M9	5					
1,5	25	$3,4 \times 7,2$	B45170-A8155-M9	70					
2,2	25	$4,7 \times 12,0$	B45170-A8225-M9	50					
10	25	$4,7 \times 12,0$	B45170-A8106-M9	50					
15	25	$7,3 \times 17,3$	B45170-A8156-M9	15					
33	25	$7,3 \times 17,3$	B45170-A8336-M9	15					
47	25	$8,9 \times 20,0$	B45170-A8476-M9	5					
68	25	$8,9 \times 20,0$	B45170-A8686-M9	5					

1) Peak voltage $V_P = 1,3 V_R$

Tantalum Electrolytic Capacitors



C _R	V _{R1})	Dimensions <i>d × l</i>	Ordering code	Min. qty.	Price per 100				
	V _{dc}	mm			Min. qty. +	50 +	100 +	250 +	500 +
μF					Capacitance tolerance ± 20 %				
0,33	40	3,4 × 7,2	B45170-E4334-M9	70					
0,47	40	3,4 × 7,2	B45170-E4474-M9	70					
0,68	40	3,4 × 7,2	B45170-E4684-M9	70					
1,0	40	3,4 × 7,2	B45170-E4105-M9	70					
1,5	40	4,7 × 12,0	B45170-E4155-M9	50					
2,2	40	4,7 × 12,0	B45170-E4225-M9	50					
3,3	40	4,7 × 12,0	B45170-E4335-M9	50					
4,7	40	4,7 × 12,0	B45170-E4475-M9	50					
6,8	40	4,7 × 12,0	B45170-E4685-M9	50					
10	40	7,3 × 17,3	B45170-E4106-M9	15					
15	40	7,3 × 17,3	B45170-E4156-M9	15					
22	40	7,3 × 17,3	B45170-E4226-M9	15					
33	40	8,9 × 20,0	B45170-E4336-M9	5					
47	40	8,9 × 20,0	B45170-E4476-M9	5					
0,1	80	3,4 × 7,2	B45170-E7104-M9	25					
0,47	80	3,4 × 7,2	B45170-E7474-M9	25					
1,0	80	4,7 × 12,0	B45170-E7105-M9	15					
2,2	80	4,7 × 12,0	B45170-E7225-M9	15					
3,3	80	4,7 × 12,0	B45170-E7335-M9	15					

1) Peak voltage $V_P = 1,3 V_R$



Long-life grade capacitor For PC boards in low-voltage equipment

Quality approval as per CECC 30200,
CECC 30201-007, CECC 30201-009
UTE C83-112, part 6

Sintered slug version, solid

Flame-retardant plastic encapsulation

Plug-in, marking on top of capacitor

Rated voltage V_R 6,3 ... 40 Vdc

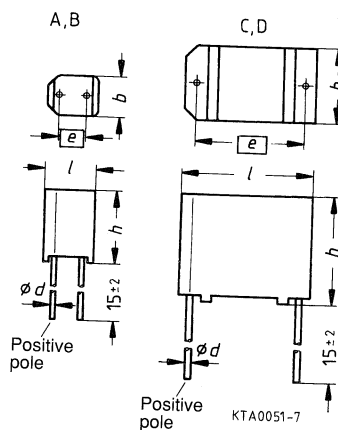
IEC climatic category 55/125/56

Operational life > 500 000 h

Failure rate $\leq 5 \text{ fit } (\leq 5 \cdot 10^{-9}/\text{h})$

Size	b_{max}	l_{max}	h_{max}	$\varnothing d$ $\pm 0,05$	e $\pm 0,2$
A	4,2	4,7	7,3	0,5	2,54
B	4,8	7,3	10,0	0,5	5,08
C	7,3	12,3	10,0	0,63	10,16
D	12,3	12,3	10,5	0,63	10,16

Sizes



Dimensions in mm

C_R	V_R ¹⁾	Dimensions $l \times b \times h$	Ordering code	Min. qty.	Price per 100				
μF	Vdc	mm			Min. qty. +	50 +	100 +	250 +	500 +
Capacitance tolerance $\pm 20 \%$									
6,8	6,3	$4,7 \times 4,2 \times 7,3$	B45181-B685-M	70					
47	6,3	$7,3 \times 4,8 \times 10,0$	B45181-B476-M	50					
150	6,3	$12,3 \times 7,3 \times 10,0$	B45181-A157-M	10					
330	6,3	$12,3 \times 12,3 \times 10,5$	B45181-A337-M	5					
4,7	10	$4,7 \times 4,2 \times 7,3$	B45181-B1475-M	70					
33	10	$7,3 \times 4,8 \times 10,0$	B45181-B1336-M	50					
100	10	$12,3 \times 7,3 \times 10,0$	B45181-A1107-M	10					
220	10	$12,3 \times 12,3 \times 10,5$	B45181-A1227-M	5					
3,3	16	$4,7 \times 4,2 \times 7,3$	B45181-B2335-M	70					
22	16	$7,3 \times 4,8 \times 10,0$	B45181-B2226-M	50					
68	16	$12,3 \times 7,3 \times 10,0$	B45181-A2686-M	10					
150	16	$12,3 \times 12,3 \times 10,5$	B45181-A2157-M	5					

¹⁾ Peak voltage $V_p = 1,3 V_R$

Tantalum Electrolytic Capacitors



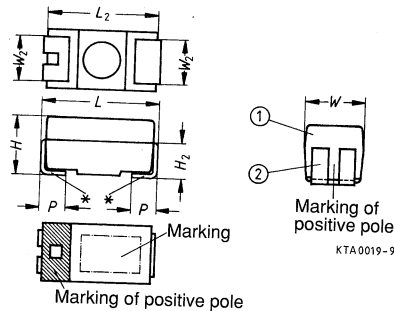
C _R	V _R ¹⁾	Dimensions l × b × h	Ordering code	Min. qty.	Price per 100				
					Min. qty. +	50 +	100 +	250 +	500 +
μF	Vdc	mm			Capacitance tolerance ± 20 %				
1,5	25	4,7 × 4,2 × 7,3	B45181-C3155-M	70					
10	25	7,3 × 4,8 × 10,0	B45181-C3106-M	50					
33	25	12,3 × 7,3 × 10,0	B45181-B3336-M	10					
47	25	12,3 × 12,3 × 10,5	B45181-B3476-M	5					
68	25	12,3 × 12,3 × 10,5	B45181-B3686-M	5					
0,1	40	4,7 × 4,2 × 7,3	B45181-C4104-M	70					
0,22	40	4,7 × 4,2 × 7,3	B45181-C4224-M	70					
0,47	40	4,7 × 4,2 × 7,3	B45181-C4474-M	70					
1	40	4,7 × 4,2 × 7,3	B45181-C4105-M	70					
1,5	40	7,3 × 4,8 × 10,0	B45181-C4155-M	50					
2,2	40	7,3 × 4,8 × 10,0	B45181-C4225-M	50					
3,3	40	7,3 × 4,8 × 10,0	B45181-C4335-M	50					
4,7	40	7,3 × 4,8 × 10,0	B45181-C4475-M	50					
6,8	40	7,3 × 4,8 × 10,0	B45181-C4685-M	50					
10	40	12,3 × 7,3 × 10,0	B45181-B4106-M	10					
15	40	12,3 × 7,3 × 10,0	B45181-B4156-M	10					
22	40	12,3 × 7,3 × 10,0	B45181-B4226-M	10					
33	40	12,3 × 12,3 × 10,5	B45181-B4336-M	5					
47	40	12,3 × 12,3 × 10,5	B45181-B4476-M	5					

¹⁾ Peak voltage $V_P = 1,3 V_R$

Long-life grade chip capacitor Application in communications and data processing systems, as well as in measuring and control equipment

Sintered slug version, solid
Suitable for wave soldering, vapor phase
soldering and other reflow methods
Tape packaging in acc. with IEC 286-3

Rated voltage V_R 6,3 ... 35 Vdc
IEC climatic category 55/125/56
Operational life > 500 000 h
Failure rate $\leq 70 \text{ fit } (\leq 70 \cdot 10^{-9}/\text{h})$

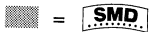


Size	Dimensions (mm)						
	$L \pm 0,2$	$L_2 \text{ typ.}$	$W \pm 0,2$	$W_2 \pm 0,1$	$H \pm 0,2$	$H_2 \text{ typ.}$	$p \pm 0,3$
A	3,2	3,0	1,6	1,2	1,6	1,0	0,8
B	3,5	3,3	2,8	2,2	1,9	1,2	0,8
C	6,0	5,8	3,2	2,2	2,5	1,5	1,3
D	7,3	7,1	4,3	2,4	2,8	1,6	1,3

C_R	$V_R^1)$	Size	Ordering code ²⁾	Min. qty.	Price per 100			
μF	Vdc				Min. qty. +	100 +	500 +	1000 + 2500 +

Capacitance tolerance $\pm 20 \%$

∇	3,3	6,3	A	B45196-E1335-M9	150				
∇	6,8	6,3	B	B45196-E1685-M9	150				
	22	6,3	C	B45196-B1226-M9	60				
	47	6,3	D	B45196-B1476-M9	50				
	68	6,3	D	B45196-B1686-M9	50				
∇	2,2	10	A	B45196-E2225-M9	150				
∇	4,7	10	B	B45196-E2475-M9	150				
	15	10	C	B45196-B2156-M9	60				
	33	10	D	B45196-B2336-M9	50				
	47	10	D	B45196-B2476-M9	50				
∇	1	16	A	B45196-E3105-M9	150				
∇	1,5	16	A	B45196-E3155-M9	150				
∇	3,3	16	B	B45196-E3335-M9	150				
	10	16	C	B45196-B3106-M9	60				
	22	16	D	B45196-B3226-M9	50				
	33	16	D	B45196-B3336-M9	50				



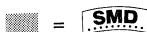
¹⁾ Peak voltage $V_P = 1,3 \cdot V_R$

²⁾ From October '91 the ordering code for sizes C and D will change from B45196-B... in B45196-E...

Tantalum Electrolytic Capacitors



C _R	V _R ¹⁾	Size	Ordering code ²⁾	Min. qty.	Price per 100				
					Min. qty. +	100 +	500 +	1000 +	2500 +
μF	Vdc				Capacitance tolerance ± 20 %				
▽ 0,68	20	A	B45196-E4684-M9	150					
▽ 2,2	20	B	B45196-E4225-M9	150					
4,7	20	C	B45196-B4475-M9	60					
6,8	20	C	B45196-B4685-M9	60					
15	20	D	B45196-B4156-M9	50					
▽ 0,47	25	A	B45196-E5474-M9	150					
▽ 1,5	25	B	B45196-E5155-M9	150					
3,3	25	C	B45196-B5335-M9	60					
10	25	D	B45196-B5106-M9	50					
▽ 0,1	35	A	B45196-E6104-M9	150					
▽ 0,15	35	A	B45196-E6154-M9	150					
▽ 0,22	35	A	B45196-E6224-M9	150					
▽ 0,33	35	A	B45196-E6334-M9	150					
▽ 0,47	35	B	B45196-E6474-M9	150					
▽ 0,68	35	B	B45196-E6684-M9	150					
1	35	B	B45196-E6105-M9	150					
1,5	35	C	B45196-B6155-M9	60					
2,2	35	C	B45196-B6225-M9	60					
3,3	35	D	B45196-B6335-M9	50					
4,7	35	D	B45196-B6475-M9	50					
6,8	35	D	B45196-B6685-M9	50					



¹⁾ Peak voltage $V_P = 1,3 \cdot V_R$

²⁾ From October '91 the ordering code for sizes C and D will change from B45196-B... in B45196-E...

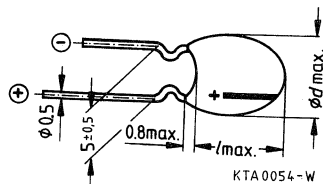
Tantalum Electrolytic Capacitors

Tantalum bead capacitor Long-life grade

Resin-dipped (flame-retardant)
High reliability
Heat-resistant construction
Resistant to solvents (cleaning)

Rated voltage 6,3 ... 35 Vdc
Operating temperature - 55 ... + 105 °C for ≥ 10 Vdc
- 55 ... + 85 °C for 6,3 Vdc

Tape packaging in acc. with IEC 286-2,
5-mm lead spacing (refer to Data Book
"Aluminum and Tantalum Electrolytic
Capacitors 1989/90", page 67)
Packing mode: AMMO pack



Dimensions in mm

Size	$\varnothing d_{\max.}$	$l_{\max.}$
A	4,5	5,0
B	4,5	5,5
C	4,5	5,5
D	5,0	6,5
E	5,5	7,0
F	5,5	7,0
G	6,0	8,0
H	6,0	8,5
I	7,0	9,5
J	7,5	11,0

CR	VR	Dimensions $d_{\max.} \times l_{\max.}$	Ordering code	Min. qty.	Price per 100				
μF	Vdc	mm			Min. qty. +	100 +	500 +	1000 +	2500 +
Capacitance tolerance $\pm 20\%$									
▼ 22	6,3	5,5 × 7,0	B45810-A1226-M8	150					
▼ 68	6,3	7,0 × 9,5	B45810-A1686-M8	50					
▼ 2,2	10	4,5 × 5,5	B45810-A2225-M8	300					
▼ 15	10	5,5 × 7,0	B45810-A2156-M8	150					
▼ 47	10	7,0 × 9,5	B45810-A2476-M8	50					
▼ 1	16	4,5 × 5,0	B45810-A3105-M8	300					
▼ 2,2	16	4,5 × 5,5	B45810-A3225-M8	250					
▼ 4,7	16	5,0 × 6,5	B45810-A3475-M8	200					
▼ 10	16	5,5 × 7,0	B45810-A3106-M8	150					
▼ 22	16	6,0 × 8,0	B45810-A3226-M8	100					
▼ 47	16	7,5 × 11,0	B45810-A3476-M8	30					
▼ 2,2	25	4,5 × 5,5	B45810-A5225-M8	200					
▼ 6,8	25	5,5 × 7,0	B45810-A5685-M8	100					
▼ 10	25	6,0 × 8,5	B45810-A5106-M8	50					
▼ 0,1	35	4,5 × 5,0	B45810-A6104-M8	250					
▼ 0,22	35	4,5 × 5,0	B45810-A6224-M8	250					
▼ 0,33	35	4,5 × 5,0	B45810-A6334-M8	250					
▼ 1	35	4,5 × 5,5	B45810-A6105-M8	200					
▼ 2,2	35	5,0 × 6,5	B45810-A6225-M8	200					
▼ 4,7	35	5,5 × 7,0	B45810-A6475-M8	100					
▼ 10	35	7,0 × 9,5	B45810-A6106-M8	50					

Capacitors for Power Electronics

Contents	Type	Page
MKV capacitors for ac application		
Damping and resonant circuit capacitors	B25832	314
Damping and commutating capacitors	B25834	316
	B25844	316
	B25835	318
Damping capacitors	B25838	320
Commutating capacitors	B25839	322
Coupling and damping capacitors		

Further technical literature

Data Book "Capacitors for Power Electronics", B4-B3252-X-X-7600
Short Form Catalog "Capacitors for Power Electronics", B4-B3838-X-X-7600
Data Sheet Collection "Low-Inductance High-Performance Capacitors B25855",
B4-B3615-X-X-7600

MKV Capacitors for AC Application

General-purpose grade capacitor
For damping purposes, resonant
circuits and voltage stabilizers
 Self-healing, integrated fuse

Load duration
 Failure quota

30 000 h
 1000 failures in 10^9 h

450 Vac | 660 Vac

IEC climatic category
 Repetitive peak voltage $\hat{V}_{max}$
 Surge peak voltage $\hat{V}_p$
 Rate of voltage rise $(dv/dt)_{max}$
 Dissipation factor $\tan \delta$

25/070/56	25/070/56
800 V	1160 V
1100 V	1600 V
20 V/ μ s	40 V/ μ s
$\leq 3 \cdot 10^{-4}$	$\leq 3 \cdot 10^{-4}$

Outline drawing 1

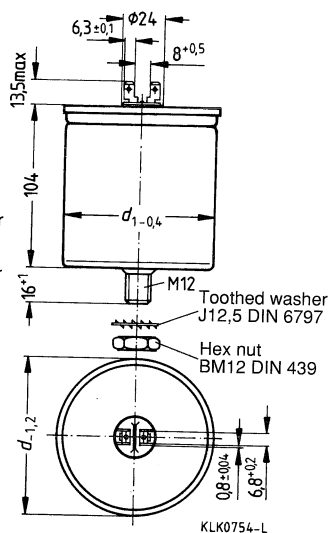
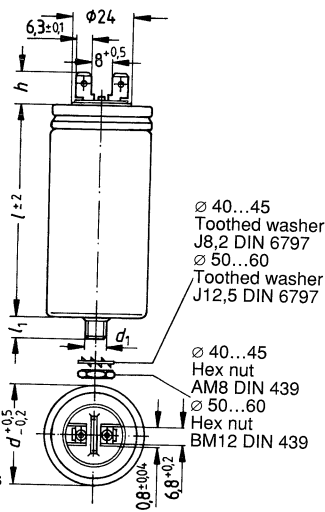
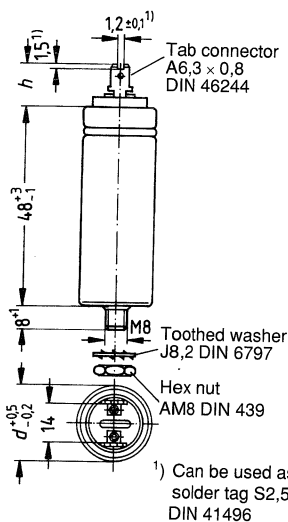
B 25 832-+★★★★-K1
 with solderable tab
 connectors 6,3 × 0,8

Outline drawing 2

B 25 832-+★★★★-K9
 with dual tab connectors
 6,3 × 0,8

Outline drawing 3

B 25 832-B★★★★-K9
 with dual tab connectors
 6,3 × 0,8



Capacitor diameter d (mm)	Dim. h_{max} mm
25	16,5
30; 35	12

Capacitor diameter d (mm)	Dim. h_{max} mm	Dim. l_1 mm	Dim. d_1
40	13,5	8	M 8
50; 60		12	M 12

Capacitor diameter $d_{-1,2}$ (mm)	Dim. $d_{1-0,4}$ mm
79,2	75,2
89,3	85,2

MKV Capacitors for AC Application

CR	Dimensions <i>d × l</i>	Out- line draw- ing	Ordering code	Min. qty.	Price each				
μF	mm				Min. qty. +	50 +			
$V_R = 640 \text{ Vdc}; V_{rms} = 450 \text{ Vac}$					Capacitance tolerance ± 10 %				
1	25 × 48	1	B25832-J4105-K1	5					
1,5	25 × 80	1	B25832-A4155-K1	5					
2,2	25 × 80	1	B25832-A4225-K1	5					
3,3	25 × 80	1	B25832-A4335-K1	5					
4,7	30 × 80	1	B25832-A4475-K1	5					
6,8	35 × 80	1	B25832-A4685-K1	5					
10	40 × 86	2	B25832-A4106-K9	2					
15	50 × 86	2	B25832-A4156-K9	2					
22	60 × 86	2	B25832-B4226-K9	1					
33	50 × 156	2	B25832-A4336-K9	1					
47	60 × 156	2	B25832-B4476-K9	1					
$V_R = 930 \text{ Vdc}; V_{rms} = 660 \text{ Vac}$					Capacitance tolerance ± 10 %				
1,5	30 × 80	1	B25832-A6155-K1	2					
2	30 × 80	1	B25832-A6205-K1	2					
4	40 × 86	2	B25832-A6405-K9	2					
6	50 × 86	2	B25832-A6605-K9	2					
8	55 × 86	2	B25832-A6805-K9	2					
10	60 × 86	2	B25832-B6106-K9	2					
15	79 × 104	3	B25832-B6156-K9	1					
22	89 × 104	3	B25832-B6226-K9	1					

MKV Capacitors for AC Application

Long-life grade capacitor For damping and commutating purposes Self-healing, integrated fuse

Load duration	100 000 h
Failure quota	300 failures in 10^9 h
IEC climatic category	25/070/56
Repetitive peak voltage $\hat{V}_{max}$	400 V ... 1130 V
Surge peak voltage $\hat{V}_p$	550 V ... 1550 V
Rate of voltage rise $(dV/dt)_{max}$	25 V/ μ s ... 500 V/ μ s
Dissipation factor $\tan \delta$	$\leq 3 \cdot 10^{-4}$

Outline drawing 1

B 25 834-+*****-+1

B 25 844-B 2106-K1

with solderable tab connectors

Outline drawing 2

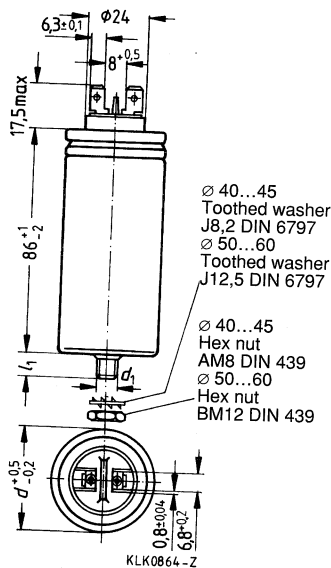
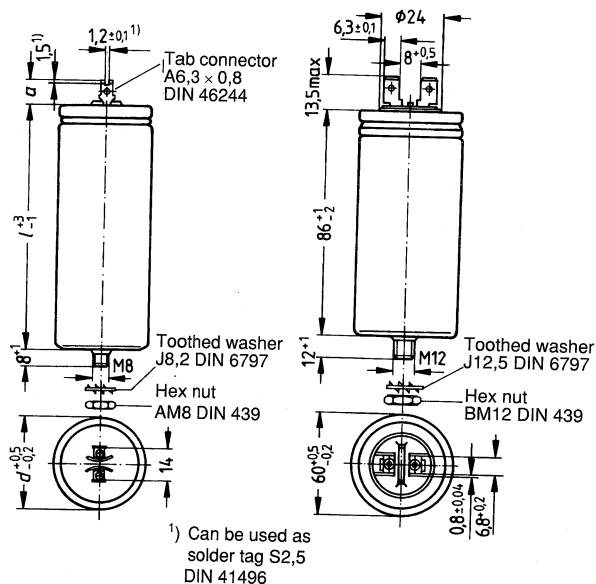
B 25 844-K 2336-K9

with dual tab connectors

Outline drawing 3

B 25 834-K*****-K9

with dual tab connectors



Capacitor diameter d (mm)	Dim. l mm	Dim. a mm
25	48	16,5 max
30, 35	48	12 max
30, 35	80	12 max

Capacitor diameter d (mm)	Dim. d_1	Dim. l_1 mm
40	M 8	8
50; 60	M 12	12

MKV Capacitors for AC Application

C _R	Dimensions <i>d × l</i> mm	Out- line draw- ing	Ordering code	Min. qty.	Price each				
					Min. qty. +	5 +	20 +		
V _R = 320 V; V _{rms} = 230 V					Capacitance tolerance ± 10 %				
10	35 × 80	1	B25844-B2106-K1	2					
33	60 × 86	2	B25844-K2336-K9	1					

C _R	Dimensions <i>d × l</i>	Out- line draw- ing	Bestell- bezeichnung	Min. qty.	Price each				
					Min. qty. +	10 +	50 +		
μF	mm								
V _R = 600 V; V _{rms} = 420 V					Capacitance tolerance ± 10 %				
1,0	25 × 48	1	B25834-B4105-K1	5					
1,5	30 × 48	1	B25834-B4155-K1	5					
2,2	30 × 48	1	B25834-B4225-K1	2					
3,3	35 × 48	1	B25834-B4335-K1	2					
4,7	30 × 80	1	B25834-B4475-K1	2					
6,8	35 × 80	1	B25834-B4685-K1	2					
10,0	40 × 86	3	B25834-K4106-K9	2					

$V_R = 750 \text{ V}; V_{rms} = 530 \text{ V}$					Capacitance tolerance ± 10 %				
4,7	35 × 80	1	B25834-B5475-K1	2					
6,8	40 × 86	3	B25834-K5685-K9	2					
10,0	50 × 86	3	B25834-K5106-K9	1					

$V_R = 900 \text{ V}; V_{rms} = 630 \text{ V}$					Capacitance tolerance ± 20 %				
0,1	25 × 48	1	B25834-J6104-M1	5					
0,22	25 × 48	1	B25834-J6224-M1	5					
0,33	25 × 48	1	B25834-J6334-M1	5					
0,47	25 × 48	1	B25834-B6474-M1	5					
0,68	25 × 48	1	B25834-B6684-M1	5					

$V_R = 900 \text{ V}; V_{rms} = 630 \text{ V}$					Capacitance tolerance ± 10 %				
1,0	30 × 48	1	B25834-B6105-K1	5					
1,5	35 × 48	1	B25834-B6155-K1	2					
2,2	30 × 80	1	B25834-B6225-K1	2					
3,3	35 × 80	1	B25834-B6335-K1	2					
4,7	40 × 86	3	B25834-K6475-K9	2					
6,8	50 × 86	3	B25834-K6685-K9	1					
10,0	60 × 86	3	B25834-K6106-K9	1					

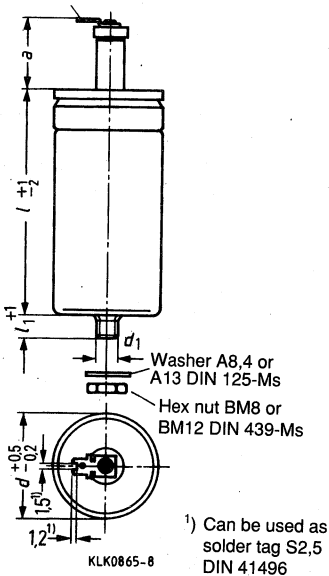
MKV Capacitors for AC Application

Long-life grade capacitor
For damping purposes
 Single-pole, self-healing, integrated fuse

Load duration	100 000 h
Failure quota	300 failures in 10 ⁹ h
IEC climatic category	25/070/56
Repetitive peak voltage $\hat{V}_{max}$	1130 V ... 4190 V
Surge peak voltage $\hat{V}_p$	1550 V ... 5760 V
Rate of voltage rise $(dv/dt)_{max}$	250 V/ μ s ... 1600 V/ μ s
Dissipation factor tan δ	$\leq 3 \cdot 10^{-4}$

B 25 835-+*****-K7

Tab connector
 A6,3 - 0,8 DIN 46244



Capacitor diameter d (mm)	Dim. l mm	Dim. d_1	Dim. a mm	Dim. l_1 mm
25	57	M 8	15	8
30				
45			22	
25	70	M 8	23	8
30				
35				
50		M 12	26	12
35	131	M 8	32	8
45				
60		M 12		

MKV Capacitors for AC Application

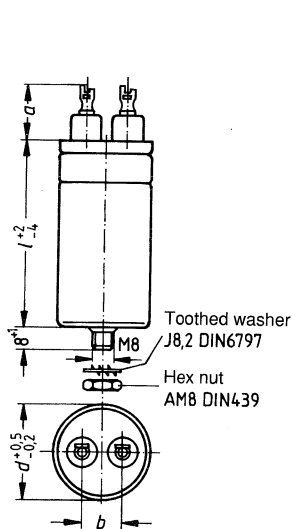
C _R	Dimensions <i>d × l</i>	Ordering code	Min. qty.	Price each				
μF	mm			Min. qty. +	20 +	50 +		
V _R = 900 V; V _{rms} = 630 V				Capacitance tolerance ± 10 %				
0,22	25 × 57	B25835-K6224-K7	2					
0,47	25 × 57	B25835-K6474-K7	2					
0,68	30 × 57	B25835-K6684-K7	2					
1,0	30 × 57	B25835-K6105-K7	2					
2,2	45 × 57	B25835-K6225-K7	1					
V _R = 1400 V; V _{rms} = 990 V				Capacitance tolerance ± 10 %				
0,1	25 × 70	B25835-K104-K7	1					
0,22	25 × 70	B25835-K224-K7	1					
0,33	25 × 95	B25835-K334-K7	1					
0,47	30 × 95	B25835-K474-K7	1					
0,68	30 × 95	B25835-K684-K7	1					
1,0	35 × 95	B25835-K105-K7	1					
2,2	50 × 95	B25835-K225-K7	1					
V _R = 2100 V; V _{rms} = 1480 V				Capacitance tolerance ± 10 %				
0,47	35 × 131	B25835-K1474-K7	1					
1,0	45 × 131	B25835-K1105-K7	1					
2,2	60 × 131	B25835-L1225-K7	1					
V _R = 3350 V; V _{rms} = 2370 V				Capacitance tolerance ± 10 %				
0,1	35 × 131	B25835-K2104-K7	1					
0,22	35 × 131	B25835-K2224-K7	1					

MKV Capacitors for AC Application

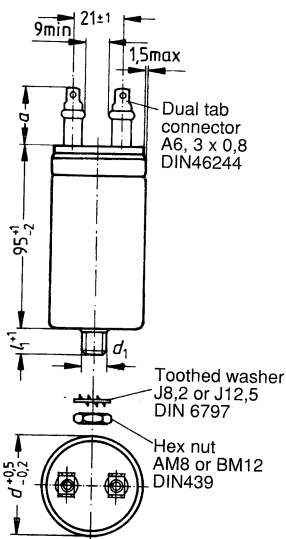
Long-life grade capacitor For commutating purposes Self-healing, integrated fuse

Load duration	100 000 h
Failure quota	300 failures in 10^9 h
IEC climatic category	25/070/56
Repetitive peak voltage $\hat{V}_{\text{max}}$	750 V ... 1380 V
Surge peak voltage $\hat{V}_p$	1030 V ... 1890 V
Rate of voltage rise $(dV/dt)_{\text{max}}$	200 V/ μs ... 600 V/ μs
Dissipation factor $\tan \delta$	$\leq 3 \cdot 10^{-4}$

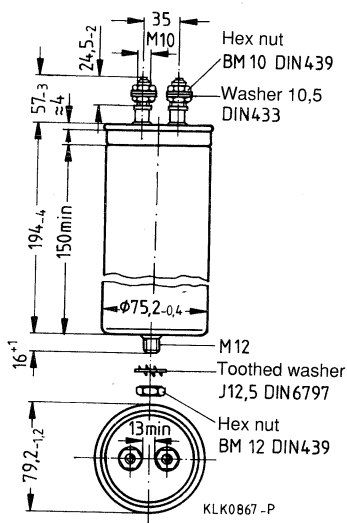
Outline drawing 1
B 25 838-A*****-M
with solder tags



Outline drawing 2
B 25 838-J*****-K9
with solderable
dual tab connectors



Outline drawing 3
B 25 838-K6106-K4
with screw terminals



Capacitor diameter d (mm)	Dim. l mm	Dim. a mm	Dim. b mm
20	48	16	10
25	48	9,5	11
30	90	19,5	13

Capacitor diameter d (mm)	Dim. d_1	Dim. a mm	Dim. l_1 mm
40	M 8	28	8
50	M 12	32	12

MKV Capacitors for AC Application

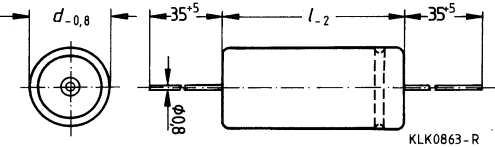
CR μF	Dimensions <i>d × l</i>	Out- line draw- ing	Ordering code	Min. qty.	Price each				
	mm				Min. qty. +	20 +	50 +		
V _R = 600 V; V _{rms} = 420 V				Capacitance tolerance ± 10 %					
4,7	40 × 95	2	B25838-J4475-K9	1					
V _R = 900 V; V _{rms} = 630 V				Capacitance tolerance ± 20 %					
0,22	20 × 48	1	B25838-A6224-M	2					
0,47	25 × 48	1	B25838-A6474-M	1					
V _R = 900 V; V _{rms} = 630 V				Capacitance tolerance ± 10 %					
4,7	50 × 95	2	B25838-J6475-K9	1					

C _R μF	Dimensions <i>d × l</i>	Out- line draw- ing	Ordering code	Min. qty.	Price each				
	mm				Min. qty. +	10 +	20 +		
V _R = 900 V; V _{rms} = 630 V					Capacitance tolerance ± 10 %				
10,0	79 × 194	3	B25838-K6106-K4	1					
V _R = 1100 V; V _{rms} = 780 V					Capacitance tolerance ± 20 %				
0,47	30 × 90	1	B25838-A8474-M	1					

MKV Capacitors for AC Application

Long-life grade capacitor
For coupling and damping purposes
Self-healing, without fuse

Load duration	30 000 h
Failure quota	1000 failures in 10 ⁹ h
IEC climatic category	25/070/56
Repetitive peak voltage $\hat{V}_{max}$	880 V
Surge peak voltage $\hat{V}_p$	1200 V
Rate of voltage rise $(dV/dt)_{max}$	150 V/ μ s ... 500 V/ μ s
Dissipation factor $\tan \delta$	$\leq 3 \cdot 10^{-4}$



CR	Dimensions $d \times l$	Insulation group	Ordering code	Min. qty.	Price each				
μF	mm				Min. qty. +	50 +	100 +		
V _R = 700 V; V _{rms} = 500 V					Capacitance tolerance ± 20 %				
0,1	16 × 32	A	B25839-B6104-M	5					
0,22	16 × 44	A	B25839-B6224-M	5					
0,33	20 × 44	B	B25839-B6334-M	5					
0,47	20 × 44	B	B25839-B6474-M	5					
0,68	20 × 75	B	B25839-B6684-M	5					
V _R = 700 V; V _{rms} = 500 V					Capacitance tolerance ± 10 %				
1,0	20 × 75	B	B25839-B6105-K	5					

EMC Components

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EMC Components

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▼ Newly included in this edition

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Further technical literature

Data Book "EMC - EMI Suppression - Components, Filters", B4-B3504-X-X-7600
(new edition in preparation)
Short Form Catalog "EMC Components - Capacitors, Chokes, Filters", B4-P2402-X-X-7400

Symbols and terms

C_R	Rated capacitance
f_R	Resonance frequency
I_R	Rated current
L	Inductance
R_{dc}	Direct current resistance
R_{cold}	Cold resistance
V_R	Rated voltage
Z	Impedance

EMI/RFI Suppression Capacitors

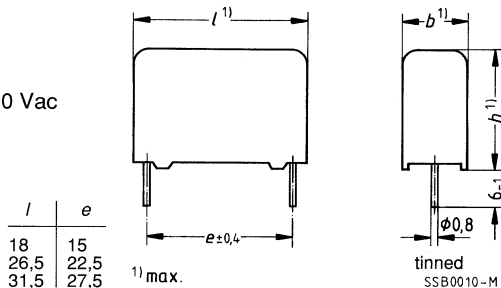
X2 capacitors

For increased safety requirements

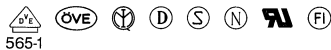
Flame-retardant plastic case

Rated voltage 250 Vac, 300 Vac, 400 Vac

IEC climatic category 40/085/21

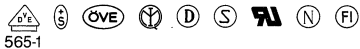


Approvals:



CR	Dimensions $b \times h \times l$	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
μF	mm							
250 Vac up to 400 Hz				Capacitance tolerance $\pm 10\%$				
0,022	5 $\times$ 10,5 $\times$ 18	B81121-C-B121	50					
0,033	5 $\times$ 10,5 $\times$ 18	B81121-C-B122	50					
0,047	7 $\times$ 12,5 $\times$ 18	B81121-C-B123	50					
0,068	8,5 $\times$ 14,5 $\times$ 18	B81121-C-B124	50					
0,1	8,5 $\times$ 14,5 $\times$ 18	B81121-C-B125	50					
0,15	8,5 $\times$ 16,5 $\times$ 26,5	B81121-C-B126	25					
0,22	10,5 $\times$ 16,5 $\times$ 26,5	B81121-C-B127	25					
0,33	10,5 $\times$ 20,5 $\times$ 26,5	B81121-C-B128	20					
0,47	11 $\times$ 21 $\times$ 31,5	B81121-C-B129	20					
0,68	13,5 $\times$ 23 $\times$ 31,5	B81121-C-B130	10					
1,0	18 $\times$ 27,5 $\times$ 31,5	B81121-C-B132	10					

Approvals:



300 Vac up to 60 Hz				Capacitance tolerance $\pm 10\%$				
0,022	5 $\times$ 10,5 $\times$ 18	B81121-C-B104	25					
0,033	7 $\times$ 12,5 $\times$ 18	B81121-C-B105	25					
0,047	8,5 $\times$ 14,5 $\times$ 18	B81121-C-B106	25					
0,068	8,5 $\times$ 14,5 $\times$ 18	B81121-C-B107	25					
0,1	9 $\times$ 17,5 $\times$ 18	B81121-C-D108	25					
0,15	8,5 $\times$ 16,5 $\times$ 26,5	B81121-C-B109	25					
0,22	10,5 $\times$ 18,5 $\times$ 26,5	B81121-C-B110	25					
0,33	11 $\times$ 21 $\times$ 31,5	B81121-C-B111	10					
0,47	12,5 $\times$ 21,5 $\times$ 31,5	B81121-C-B112	10					
0,68	15 $\times$ 24,5 $\times$ 31,5	B81121-C-B113	10					
1,0	18 $\times$ 27,5 $\times$ 31,5	B81121-C-B114	10					

EMI/RFI Suppression Capacitors

Approvals:

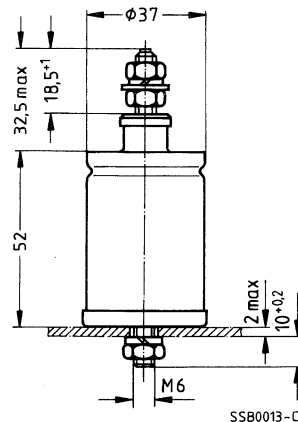


C_R	Dimensions $b \times h \times l$	Ordering code	Min. qty.	Price each				
				Min. qty. +	50 +	100 +	250 +	500 +
μF	mm							
400 Vac up to 1000 Hz				Capacitance tolerance $\pm 10\%$				
0,01	6 $\times$ 11 $\times$ 18	B81121-C-B92	25					
0,022	8,5 $\times$ 14,5 $\times$ 18	B81121-C-B93	25					
0,033	7 $\times$ 16 $\times$ 26,5	B81121-C-B94	25					
0,047	8,5 $\times$ 16,5 $\times$ 26,5	B81121-C-B95	25					
0,068	10,5 $\times$ 16,5 $\times$ 26,5	B81121-C-B96	25					
0,1	10,5 $\times$ 20,5 $\times$ 26,5	B81121-C-B97	20					
0,15	11 $\times$ 21 $\times$ 31,5	B81121-C-B98	10					
0,22	14 $\times$ 24,5 $\times$ 31,5	B81121-C-B99	10					
0,33	18 $\times$ 27,5 $\times$ 31,5	B81121-C-B100	5					

X2 capacitor For high rel requirements

Hermetically sealed metal case
Connecting bolt M6 (nuts and spring washers
included in delivery)

Rated voltage 800 Vdc, 400 Vac up to 400 Hz
IEC climatic category 40/085/56



C_R	Dimensions $d \times l$	Ordering code	Min. qty.	Price each				
				Min. qty. +	20 +			
μF	mm							
800 Vdc, 400 Vac up to 400 Hz				Capacitance tolerance $\pm 20\%$				
0,6	37 $\times$ 52	B81551-A-B16	1					

EMI/RFI Suppression Capacitors

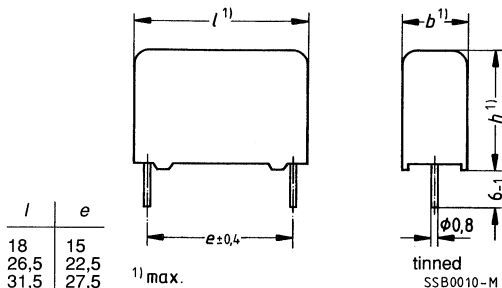
Y capacitors

For increased safety requirements

Flame-retardant plastic case

Rated voltage 250 Vac up to 60 Hz

IEC climatic category 40/085/21



Approvals:



DIN IEC 65/VDE 0860/8.81



(UL 1414)



CR	Dimensions <i>b × h × l</i>	Ordering code	Min. qty.	Price each				
	mm			Min. qty. +	50 +	100 +	250 +	500 +
250 Vac up to 60 Hz				Capacitance tolerance ± 20 %				
2500 pF	6 × 11 × 18	B81121-C-B141	50					
3300 pF	7 × 12,5 × 18	B81121-C-B142	50					
4700 pF	8,5 × 14,5 × 18	B81121-C-B143	50					
6800 pF	6 × 15 × 26,5	B81121-C-B144	25					
0,01 μF	7 × 16 × 26,5	B81121-C-B145	25					
0,015 μF	8,5 × 16,5 × 26,5	B81121-C-B146	25					
0,022 μF	10,5 × 18,5 × 26,5	B81121-C-B147	25					
0,027 μF	10,5 × 20,5 × 26,5	B81121-C-B148	25					
0,033 μF	11 × 21 × 31,5	B81121-C-B149	10					

X2 and Y capacitors are also available as assortment:

35 capacitors in rectangular plastic case	Items	Ordering code	Min. qty.	Price per assortment		
				Min. qty. +	10 +	
X2 capacitors 250 Vac, 1 item each/value	11	B81121-X-Y	1			
X2 capacitors 300 Vac, 1 item each/value	11					
Y capacitors 250 Vac, 1 to 2 items each/value	13					

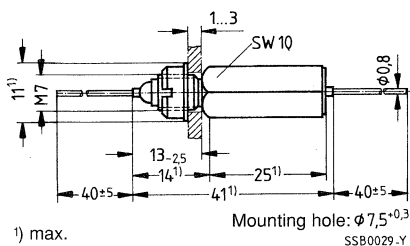
EMI/RFI Feed-Through Elements

X2 and Y feed-through capacitors For central screw mounting

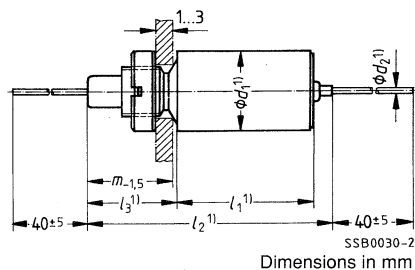
In accordance with VDE 0565-1

Rated voltage 80 ... 440 Vdc
42 ... 250 Vac, 60 Hz
Rated current 10 ... 25 A
IEC climatic category 40/100/56 or
40/085/56 for
B85121-A-B15

B85121-D-B1 ... -B4



B85121-A-B5 ... -B15



Type	d_1	l_1	l_2	l_3	m	d_2	Thread	Mounting holes
B85121-A-B7	16	24	42,5	16,5	16	1	M10 × 0,75	10,5 + 0,3
B85121-A-B9	16	34	52,5	16,5	16	1	M10 × 0,75	10,5 + 0,3
B85121-A-B11	16	34	52,5	16,5	16	1	M10 × 0,75	10,5 + 0,3
B85121-A-B15	16	34	52,5	16,5	16	1	M10 × 0,75	10,5 + 0,3
B85121-A-B5	20	38,5	58	18	17	2	M12 × 0,75	12,5 + 0,5
B85121-A-B6	20	38,5	58	18	17	2	M12 × 0,75	12,5 + 0,5

I/R	V _R Vdc / Vac 60 Hz	C _R μF	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	50 +	100 +	250 +
10	350/250	5000 pF (X2)	B85121-D-B1	1					
10	350/250	0,01 (X2)	B85121-D-B2	1					
10	80/ 42	0,05	B85121-D-B4	1					
					Min. qty. +	10 +	25 +	50 +	
16	350/250	0,025 (X2)	B85121-A-B7	1					
16	350/250	0,05 (X2)	B85121-A-B9	1					
16	160/110	0,1	B85121-A-B11	1					
16	160/ 75	1,0 (MP)	B85121-A-B15	1					
25	350/125	0,05	B85121-A-B6	1					
25	440/250	0,035 (Y)	B85121-A-B5	1					

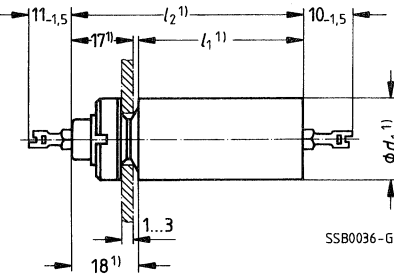
EMI/RFI Feed-Through Elements

Feed-through filters For central screw mounting

The incorporated capacitors comply with VDE 0565-1.

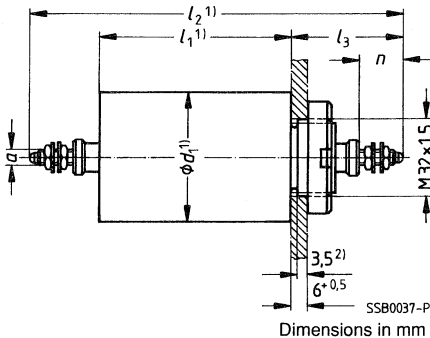
Rated voltage 250 ... 750 Vdc
 250 ... 440 Vac, 60 Hz
Rated current 6 A ... 200 A
IEC climatic category 40/085/56

B85321-A-B6, -B9



1) max. 2) min. for supporting thread length

B85321-A-B1, -B2, -B4, -B8, -B11



Type	d1	l1	l2	l3	a	n	Mounting holes
B85321-A-B9	16	38	56	—	—	—	10,5 + 0,3
B85321-A-B6	20	40	58	—	—	—	12,5 + 0,3
B85321-A-B1	55	92	166	45-3	M 6	17-2	32
B85321-A-B2	55	92	166	45-3	M 6	17-2	32
B85321-A-B8	55	92	151	45-3	M 6	17-2	32
B85321-A-B11	55	94	200	62-4	M 8	24-4	32
B85321-A-B4	55	161	271	65-4	M10	26-3	32

I/R	VR	CR	Ordering code	Min. qty.	Price each				
					Min. qty. +	5 +	10 +		
A	Vdc/ Vac 60 Hz	pF							
6	440/250	2 × 2 µF (X2)	B85321-A-B8	1					
16	350/250	2 × 2500 (Y)	B85321-A-B6	1					
16	250/250	2 × 2500 (Y)	B85321-A-B9	1					
40	440/250	2 × 2 µF (X2)	B85321-A-B1	1					
40	750/440	2 × 1 µF (X2)	B85321-A-B2	1					
100	750/440	2 × 1 µF (X2)	B85321-A-B11	1					
200	750/440	2 × 1,2 µF (X2)	B85321-A-B4	1					

EMI/RFI Feed-Through Elements

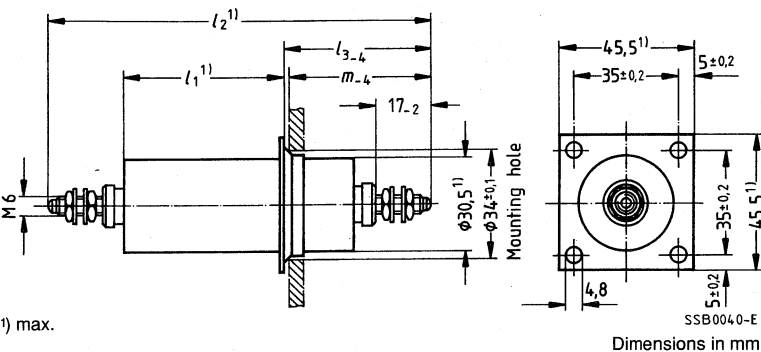
Feed-through filters With mounting flange

The incorporated capacitors comply with VDE 0565-1.

Rated voltage 350 Vdc/250 Vac, 60 Hz

Rated current 25 A

IEC climatic category 40/085/56



Type	l_1	l_2	l_3	m
B85331-A-B1	68	152	61	60,5
B85331-A-B2	48,5	115	44	43,5

I_R	V_R	C_R	Ordering code	Min. qty.	Price each			
					Min. qty. +	10 +	20 +	50
25	350/250	$2 \times 0,1 \mu F$ (X2)	B85331-A-B1	1				
25	350/250	$2 \times 2500 pF$ (Y)	B85331-A-B2	1				

EMI/RFI Feed-Through Elements

VHF feed-through filters For communications systems

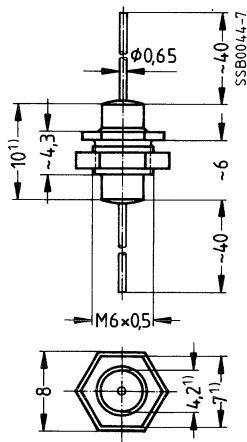
Solder or screw connection

Rated voltage 350 Vdc

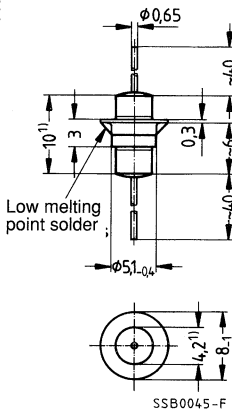
Rated current 6 A

IEC climatic category 40/085/21

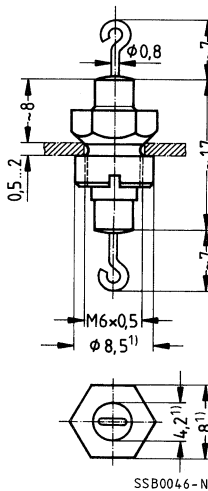
B85313-A-B7



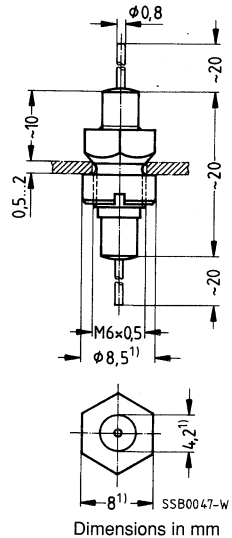
B85313-A-B4



B85313-A-B3



B85313-A-C1



1) max.

Mounting hole for screw connection 6,3 $\varnothing \pm 0,2$

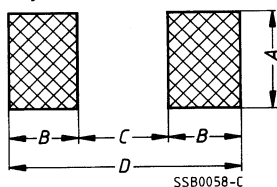
Mounting hole for solder connection 5,3 $\varnothing \pm 0,2$

I/R	C/R	Ordering code	Min. qty.	Price each				
				Min. qty. +	20 +	50 +	100 +	200 +
A	pF							
6	2 x 800	B85313-A-B7	5					
6	2 x 800	B85313-A-B4	5					
6	2 x 1600	B85313-A-B3	5					
6	2 x 3500	B85313-A-C1	5					

Chip inductors SIMID 01

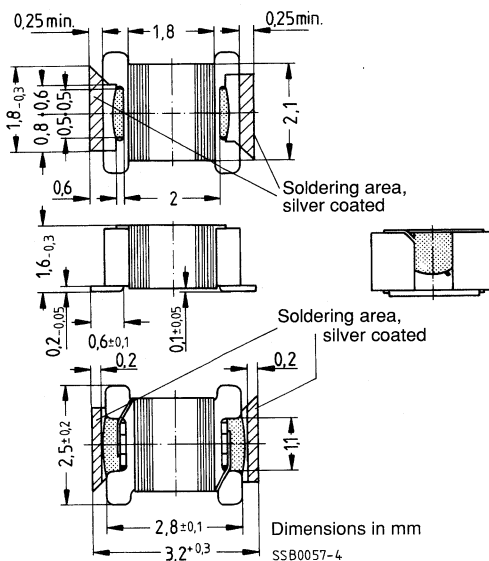
Without encapsulation
Suitable for all soldering methods
Tape packaging in accordance with
IEC 286-3, 8-mm blister tape

Rated inductance 0,022 ... 10 μ H
Rated current 0,09 ... 0,6 A
IEC climatic category 55/125/56

Layout recommendation

SSB0058-C

Dimensions	A	B	C	D
Wave soldering	2,3	1,60	2,1	5,3
Reflow soldering	2,7	1,15	2,1	4,4



L	Quality at measuring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
μ H	Q _{min}	MHz	mA			Min. qty. +	50 +	100 +	500 +	1000 +

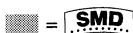
Carrier material: ceramics

Inductance tolerance $\pm 20\%$

0,022	30	100	600	B82412-A3220-M	25					
0,027	20	50	600	B82412-A3270-M	25					

Inductance tolerance $\pm 10\%$

0,033	25	50	540	B82412-A3330-K	25					
0,039	25	50	500	B82412-A3390-K	25					
0,047	25	50	470	B82412-A3470-K	25					
0,056	30	50	460	B82412-A3560-K	25					
0,068	30	50	440	B82412-A3680-K	25					
0,082	30	50	430	B82412-A3820-K	25					
0,10	30	50	400	B82412-A3101-K	25					
0,12	25	30	380	B82412-A3121-K	25					
0,15	25	30	370	B82412-A3151-K	25					
0,18	25	30	340	B82412-A3181-K	25					
0,22	25	30	320	B82412-A3221-K	25					
0,27	30	30	300	B82412-A3271-K	25					
0,33	30	30	280	B82412-A3331-K	25					
0,39	30	30	260	B82412-A3391-K	25					
0,47	30	30	225	B82412-A3471-K	25					
0,56	30	30	200	B82412-A3561-K	25					
0,68	30	30	180	B82412-A3681-K	25					
0,82	30	30	150	B82412-A3821-K	25					



cont'd on page 334

L μH	Quality at mea- suring frequency		I _n at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz	mA			Min. qty. +	50 +	100 +	500 +	1000 +
Carrier material: ferrite						Inductance tolerance ± 10 %				
1,0	30	7,96	330	B82412-A1102-K	25					
1,2	30	7,96	310	B82412-A1122-K	25					
1,5	30	7,96	300	B82412-A1152-K	25					
1,8	30	7,96	290	B82412-A1182-K	25					
2,2	30	7,96	270	B82412-A1222-K	25					
2,7	30	7,96	220	B82412-A1272-K	25					
3,3	30	7,96	200	B82412-A1332-K	25					
3,9	30	7,96	190	B82412-A1392-K	25					
4,7	35	7,96	160	B82412-A1472-K	25					
5,6	35	7,96	140	B82412-A1562-K	25					
6,8	35	7,96	120	B82412-A1682-K	25					
8,2	35	7,96	110	B82412-A1822-K	25					
10,0	35	7,96	90	B82412-A1103-K	25					

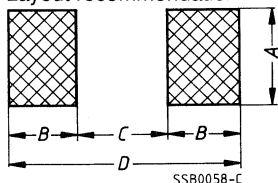
These chip inductors are also available as assortment:

SIMID 01 lab assortment comprising 70 items	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
5 items each/value Range 0.068 ... 8.2 μH	E 6	B82412-X1	1					

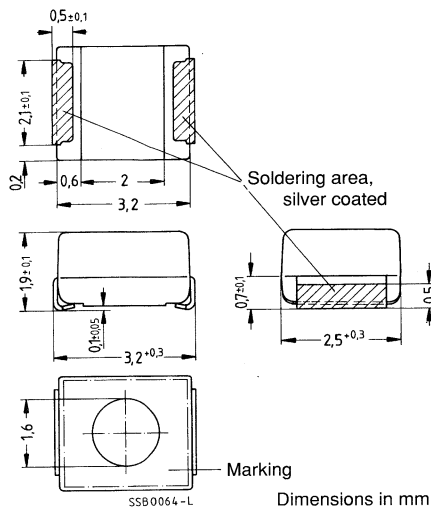
Chip inductors SIMID 02

With flame-retardant encapsulation
Suitable for all soldering methods
Tape packaging in accordance with
IEC 286-3, 8-mm blister tape

Rated inductance 0,01 ... 100 μ H
Rated current 0,065 ... 0,7 A
IEC climatic category 55/125/56

Layout recommendation

Dimensions	A	B	C	D
Wave soldering	2,3	1,60	2,1	5,3
Reflow soldering	2,7	1,15	2,1	4,4



L	Quality at measuring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
μ H	Q _{min}	MHz	mA			Min. qty. +	50 +	100 +	500 +	1000 +

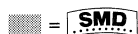
Carrier material: ceramics

Inductance tolerance $\pm 20 \%$

0,010	20	100	700	B82422-A3100-M	25					
0,012	25	100	700	B82422-A3120-M	25					
0,015	25	100	640	B82422-A3150-M	25					
0,018	30	100	640	B82422-A3180-M	25					
0,022	30	100	570	B82422-A3220-M	25					
0,027	20	50	570	B82422-A3270-M	25					
0,033	20	50	530	B82422-A3330-M	25					
0,039	25	50	530	B82422-A3390-M	25					
0,047	25	50	480	B82422-A3470-M	25					
0,056	25	50	470	B82422-A3560-M	25					

Inductance tolerance $\pm 10 \%$

0,068	25	50	440	B82422-A3680-K	25					
0,082	25	50	415	B82422-A3820-K	25					
0,10	25	50	400	B82422-A3101-K	25					
0,12	20	30	390	B82422-A3121-K	25					
0,15	20	30	360	B82422-A3151-K	25					
0,18	20	30	345	B82422-A3181-K	25					
0,22	20	30	280	B82422-A3221-K	25					
0,27	20	30	250	B82422-A3271-K	25					
0,33	20	30	200	B82422-A3331-K	25					
0,39	20	30	180	B82422-A3391-K	25					
0,47	20	30	150	B82422-A3471-K	25					
0,56	20	30	145	B82422-A3561-K	25					
0,68	20	30	140	B82422-A3681-K	25					
0,82	20	30	135	B82422-A3821-K	25					



con'd on page 336

L μH	Quality at measuring frequency		I _R at 40 °C mA	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				Min. qty. +	50 +	100 +	500 +	1000 +
Carrier material: ferrite						Inductance tolerance ± 10 %				
1,0	20	7,96	380	B82422-A1102-K	25					
1,2	20	7,96	370	B82422-A1122-K	25					
1,5	20	7,96	340	B82422-A1152-K	25					
1,8	25	7,96	290	B82422-A1182-K	25					
2,2	25	7,96	270	B82422-A1222-K	25					
2,7	25	7,96	240	B82422-A1272-K	25					
3,3	25	7,96	200	B82422-A1332-K	25					
3,9	25	7,96	175	B82422-A1392-K	25					
4,7	25	7,96	150	B82422-A1472-K	25					
5,6	25	7,96	140	B82422-A1562-K	25					
6,8	25	7,96	135	B82422-A1682-K	25					
8,2	25	7,96	130	B82422-A1822-K	25					
10	25	2,52	180	B82422-A1103-K	25					
12	25	2,52	175	B82422-A1123-K	25					
15	25	2,52	165	B82422-A1153-K	25					
18	25	2,52	155	B82422-A1183-K	25					
22	25	2,52	145	B82422-A1223-K	25					
27	25	2,52	120	B82422-A1273-K	25					
33	25	2,52	110	B82422-A1333-K	25					
39	25	2,52	90	B82422-A1393-K	25					
47	25	2,52	85	B82422-A1473-K	25					
56	25	2,52	80	B82422-A1563-K	25					
68	25	2,52	80	B82422-A1683-K	25					
82	20	2,52	70	B82422-A1823-K	25					
100	20	2,52	65	B82422-A1104-K	25					

These chip inductors are also available as assortment:

SIMID 02 lab assortment comprising 95 items	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
5 items each/value Range 0,1 ... 100 μH	E 6	B82422-X1	1					

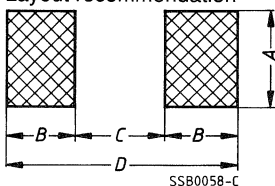
Chip inductors SIMID 03

With flame-retardant encapsulation
Suitable for all soldering methods
Tape packaging in accordance with
IEC 286-3, 12-mm blister tape

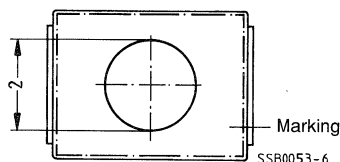
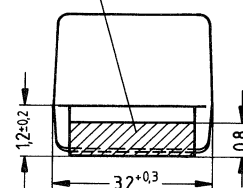
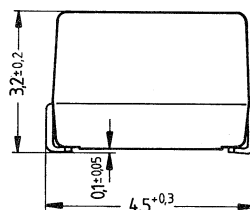
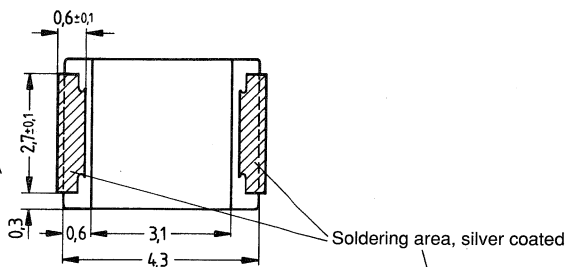
Rated inductance 1 ... 1000 μ H

Rated current 0,055 ... 0,6 A

IEC climatic category 55/125/56

Layout recommendation

Dimensions	A	B	C	D
Wave soldering	3,1	1,7	3,2	6,6
Reflow soldering	3,6	1,3	3,2	5,8



Dimensions in mm

L μ H	Quality at mea- suring frequency		I_R at 40 °C mA	Ordering code	Min. qty.	Price per 100				
	Q_{min}	MHz				Min. qty. +	50 +	100 +	500 +	1000 +

Carrier material: ceramics

Inductance tolerance $\pm 20\%$

1,0	25	7,96	600	B82432-A1102-M	25					
1,2	25	7,96	560	B82432-A1122-M	25					
1,5	25	7,96	535	B82432-A1152-M	25					
1,8	25	7,96	490	B82432-A1182-M	25					
2,2	30	7,96	480	B82432-A1222-M	25					
2,7	30	7,96	450	B82432-A1272-M	25					
3,3	30	7,96	425	B82432-A1332-M	25					
3,9	30	7,96	410	B82432-A1392-M	25					
4,7	30	7,96	390	B82432-A1472-M	25					
5,6	30	7,96	375	B82432-A1562-M	25					
6,8	30	7,96	360	B82432-A1682-M	25					
8,2	30	7,96	330	B82432-A1822-M	25					

cont'd on page 338

L μH	Quality at mea- suring frequency		I _R at 40 °C mA	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				Min. qty. +	50 +	100 +	500 +	1000 +
Carrier material: ferrite						Inductance tolerance ± 10 %				
10	45	2,52	320	B82432-A1103-K	25					
12	45	2,52	300	B82432-A1123-K	25					
15	45	2,52	280	B82432-A1153-K	25					
18	45	2,52	270	B82432-A1183-K	25					
22	45	2,52	260	B82432-A1223-K	25					
27	45	2,52	245	B82432-A1273-K	25					
33	45	2,52	230	B82432-A1333-K	25					
39	45	2,52	220	B82432-A1393-K	25					
47	40	2,52	210	B82432-A1473-K	25					
56	40	2,52	200	B82432-A1563-K	25					
68	40	2,52	190	B82432-A1683-K	25					
82	35	2,52	175	B82432-A1823-K	25					
100	40	2,52	145	B82432-A1104-K	25					
120	35	0,796	140	B82432-A1124-K	25					
150	35	0,796	130	B82432-A1154-K	25					
180	35	0,796	120	B82432-A1184-K	25					
220	30	0,796	115	B82432-A1224-K	25					
270	30	0,796	90	B82432-A1274-K	25					
330	30	0,796	85	B82432-A1334-K	25					
390	35	0,796	80	B82432-A1394-K	25					
470	35	0,796	75	B82432-A1474-K	25					
560	30	0,796	70	B82432-A1564-K	25					
680	30	0,796	65	B82432-A1684-K	25					
820	30	0,796	60	B82432-A1824-K	25					
1000	30	0,796	55	B82432-A1105-K	25					

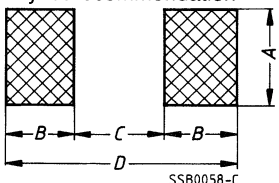
These chip inductors are also available as assortment:

SIMID 03 lab assortment comprising 57 items	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
▼ 3 items each/value Range 1 ... 1000 μH	E 6	B82432-X1	1					

Chip inductors SIMID 04

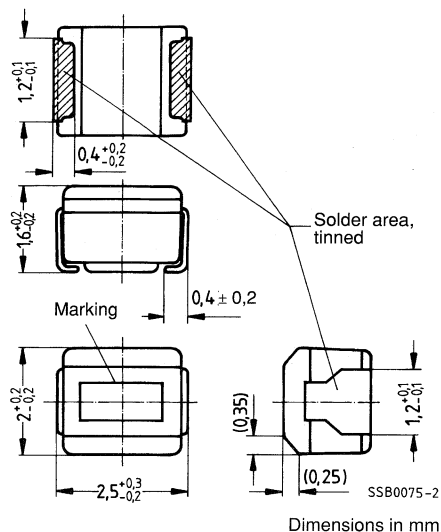
Heat-resistant epoxy encapsulation
 Suitable for all soldering methods
 Tape packaging in accordance with
 EIA-481, 8-mm blister tape
 L values $\geq 27 \mu\text{H}$ magnetically shielded

Rated inductance 0,22 ... 100 μH
 Rated current 0,01 ... 0,19 A
 IEC climatic category 55/085/56

Layout recommendation

SSB0058-C

Dimensions	A	B	C	D
Wave soldering	1,2	1,25	1,5	4,0
Reflow soldering	1,6	1,05	1,5	3,5



Dimensions in mm

L μH	Quality at measuring frequency		I_R at 85 °C mA	Ordering code	Min. qty.	Price per 100				
	$Q_{\min}$	MHz				Min. qty. +	50 +	100 +	500 +	1000 +

Inductance tolerance $\pm 20 \%$

▼ 0,22	25	25,2	190	B82494-A1221-M	25
▼ 0,27	25	25,2	180	B82494-A1271-M	25
▼ 0,33	25	25,2	170	B82494-A1331-M	25
▼ 0,39	25	25,2	160	B82494-A1391-M	25
▼ 0,47	25	25,2	155	B82494-A1471-M	25
▼ 0,56	25	25,2	150	B82494-A1561-M	25
▼ 0,68	25	25,2	140	B82494-A1681-M	25
▼ 0,82	25	25,2	130	B82494-A1821-M	25
▼ 1,0	25	7,96	195	B82494-A1102-M	25
▼ 1,2	25	7,96	180	B82494-A1122-M	25
▼ 1,5	25	7,96	170	B82494-A1152-M	25
▼ 1,8	25	7,96	160	B82494-A1182-M	25
▼ 2,2	25	7,96	155	B82494-A1222-M	25
▼ 2,7	25	7,96	145	B82494-A1272-M	25
▼ 3,3	25	7,96	135	B82494-A1332-M	25
▼ 3,9	25	7,96	130	B82494-A1392-M	25
▼ 4,7	25	7,96	125	B82494-A1472-M	25
▼ 5,6	25	7,96	120	B82494-A1562-M	25
▼ 6,8	25	7,96	115	B82494-A1682-M	25
▼ 8,2	25	7,96	105	B82494-A1822-M	25

cont'd on page 340

L μH	Quality at measuring frequency		I _A at 85 °C mA	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				Min. qty. +	50 +	100 +	500 +	1000 +
Inductance tolerance ± 10 %										
▼ 10	25	2,52	80	B82494-A1103-K	25					
▼ 12	25	2,52	75	B82494-A1123-K	25					
▼ 15	25	2,52	70	B82494-A1153-K	25					
▼ 18	25	2,52	65	B82494-A1183-K	25					
▼ 22	25	2,52	60	B82494-A1223-K	25					
▼ 27	40	2,52	18	B82494-G1273-K	25					
▼ 33	40	2,52	14	B82494-G1333-K	25					
▼ 39	40	2,52	13	B82494-G1393-K	25					
▼ 47	40	2,52	12	B82494-G1473-K	25					
▼ 56	40	2,52	10	B82494-G1563-K	25					
▼ 68	25	2,52	17	B82494-G1683-K	25					
▼ 82	25	2,52	14	B82494-G1823-K	25					
▼ 100	25	0,796	10	B82494-G1104-K	25					

EMI/RFI Suppression Chokes

HF chokes SBC (Small Bobbin Core)

With ferrite drum core and flame-retardant lacquer coating

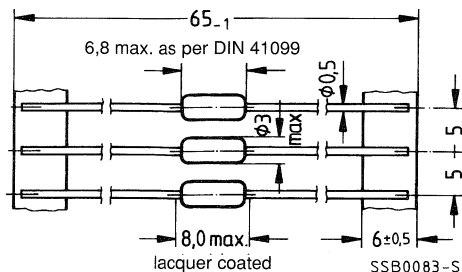
Color coding as per IEC 62

Tape packaging in acc. with IEC 286-1

Rated inductance 1 ... 1000 μ H

Rated current 0,055 ... 0,725 A

IEC climatic category 55/125/56



Min. lead spacing: 10 mm

Dimensions in mm

L	Quality at measuring frequency		/R at 40 °C	Ordering code	Min. qty.	Price per 100				
μH	Q _{min}	MHz	mA			Min. qty. +	50 +	100 +	500 +	1000 +
Inductance tolerance ± 10 %										
1,0	40	7,96	725	B82141-A1102-K	25					
1,2	40	7,96	700	B82141-A1122-K	25					
1,5	40	7,96	670	B82141-A1152-K	25					
1,8	45	7,96	660	B82141-A1182-K	25					
2,2	45	7,96	630	B82141-A1222-K	25					
2,7	45	7,96	610	B82141-A1272-K	25					
3,3	50	7,96	580	B82141-A1332-K	25					
3,9	50	7,96	560	B82141-A1392-K	25					
4,7	50	7,96	530	B82141-A1472-K	25					
5,6	50	7,96	510	B82141-A1562-K	25					
6,8	50	7,96	480	B82141-A1682-K	25					
8,2	50	7,96	450	B82141-A1822-K	25					
10	55	2,52	410	B82141-A1103-K	25					
12	55	2,52	385	B82141-A1123-K	25					
15	55	2,52	365	B82141-A1153-K	25					
18	55	2,52	350	B82141-A1183-K	25					
22	55	2,52	335	B82141-A1223-K	25					
27	55	2,52	315	B82141-A1273-K	25					
33	55	2,52	300	B82141-A1333-K	25					
39	55	2,52	285	B82141-A1393-K	25					

cont'd on page 342

EMI/RFI Suppression Chokes

L μH	Quality at mea- suring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz	mA			Min. qty. +	50 +	100 +	500 +	1000 +
Inductance tolerance ± 5 %										
47	55	2,52	200	B82141-A1473-J	25					
56	55	2,52	195	B82141-A1563-J	25					
68	55	2,52	185	B82141-A1683-J	25					
82	55	2,52	175	B82141-A1823-J	25					
100	60	0,796	170	B82141-A1104-J	25					
120	60	0,796	160	B82141-A1124-J	25					
150	60	0,796	150	B82141-A1154-J	25					
180	60	0,796	135	B82141-A1184-J	25					
220	60	0,796	130	B82141-A1224-J	25					
270	60	0,796	115	B82141-A1274-J	25					
330	60	0,796	105	B82141-A1334-J	25					
390	60	0,796	95	B82141-A1394-J	25					
470	60	0,796	90	B82141-A1474-J	25					
560	60	0,796	75	B82141-A1564-J	25					
680	60	0,796	65	B82141-A1684-J	25					
820	60	0,796	60	B82141-A1824-J	25					
1000	50	0,796	55	B82141-A1105-J	25					

These HF chokes (type SBC) are also available as assortment:

HF choke assortment	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
10 items each/value Range 1 ... 1000 μH	E 12	B82141-X1	1					

EMI/RFI Suppression Chokes

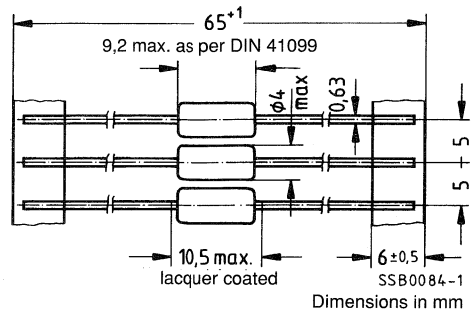
HF chokes BC (Bobbin Core)

With ferrite drum core and flame-retardant lacquer coating
Color coding as per IEC 62
Tape packaging in acc. with IEC 286-1

Rated inductance 1 ... 4700 μ H

Rated current 0,055 ... 1,2 A

IEC climatic category 55/125/56



L	Quality at measuring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				mA	Min. qty. +	50 +	100 +	500 +
μH										
Inductance tolerance ± 10 %										
1,0	55	7,96	1200	B78108-S1102-K	25					
1,2	55	7,96	1150	B78108-S1122-K	25					
1,5	55	7,96	1100	B78108-S1152-K	25					
1,8	55	7,96	1030	B78108-S1182-K	25					
2,2	55	7,96	1000	B78108-S1222-K	25					
2,7	60	7,96	940	B78108-S1272-K	25					
3,3	60	7,96	900	B78108-S1332-K	25					
3,9	60	7,96	850	B78108-S1392-K	25					
4,7	60	7,96	820	B78108-S1472-K	25					
5,6	60	7,96	780	B78108-S1562-K	25					
6,8	65	7,96	670	B78108-S1682-K	25					
8,2	65	7,96	690	B78108-S1822-K	25					
10	70	2,52	680	B78108-S1103-K	25					
12	70	2,52	650	B78108-S1123-K	25					
15	60	2,52	610	B78108-S1153-K	25					
18	60	2,52	580	B78108-S1183-K	25					
22	55	2,52	560	B78108-S1223-K	25					
27	55	2,52	530	B78108-S1273-K	25					
33	55	2,52	500	B78108-S1333-K	25					
39	50	2,52	470	B78108-S1393-K	25					

cont'd on page 344

EMI/RFI Suppression Chokes

L	Quality at measuring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				mA	Min. qty. +	50 +	100 +	500 +
Inductance tolerance ± 5 %										
47	45	2,52	450	B78108-S1473-J	25					
56	40	2,52	430	B78108-S1563-J	25					
68	40	2,52	410	B78108-S1683-J	25					
82	35	2,52	390	B78108-S1823-J	25					
100	70	0,796	370	B78108-S1104-J	25					
120	70	0,796	300	B78108-S1124-J	25					
150	70	0,796	280	B78108-S1154-J	25					
180	70	0,796	270	B78108-S1184-J	25					
220	70	0,796	250	B78108-S1224-J	25					
270	70	0,796	200	B78108-S1274-J	25					
330	70	0,796	190	B78108-S1334-J	25					
390	70	0,796	180	B78108-S1394-J	25					
470	70	0,796	170	B78108-S1474-J	25					
560	60	0,796	160	B78108-S1564-J	25					
680	55	0,796	150	B78108-S1684-J	25					
820	50	0,796	140	B78108-S1824-J	25					
1000	50	0,252	130	B78108-S1105-J	25					
1200	50	0,252	115	B78108-S1125-J	25					
1500	50	0,252	100	B78108-S1155-J	25					
1800	50	0,252	95	B78108-S1185-J	25					
2200	40	0,252	80	B78108-S1225-J	25					
2700	40	0,252	75	B78108-S1275-J	25					
3300	40	0,252	62	B78108-S1335-J	25					
3900	40	0,252	59	B78108-S1395-J	25					
4700	35	0,252	55	B78108-S1475-J	25					

These HF chokes (type BC) are also available as assortment:

HF choke assortment	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
10 items each/value Range 1... 4700 μH	E 12	B78108-X4	1					

EMI/RFI Suppression Chokes

HF chokes MCC (Mini Cylinder Core)

With ferrite drum core and flame-retardant lacquer coating

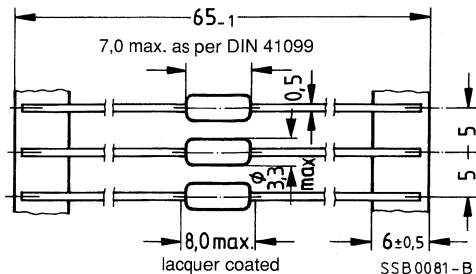
Color coding as per IEC 62

Tape packaging in acc. with IEC 286-1

Rated inductance 0,1 ... 100 μ H

Rated current 0,085 ... 1,1 A

IEC climatic category 55/125/56



Min. lead spacing: 10 mm

Dimensions in mm

L	Quality at mea- suring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				mA	Min. qty. +	50 +	100 +	500 +
Inductance tolerance ± 10 %										
0,10	40	25,2	1100	B78108-T3101-K	25					
0,12	40	25,2	1000	B78108-T3121-K	25					
0,15	38	25,2	1020	B78108-T3151-K	25					
0,18	35	25,2	1000	B78108-T3181-K	25					
0,22	35	25,2	990	B78108-T3221-K	25					
0,27	35	25,2	910	B78108-T3271-K	25					
0,33	35	25,2	830	B78108-T3331-K	25					
0,39	35	25,2	790	B78108-T3391-K	25					
0,47	35	25,2	750	B78108-T3471-K	25					
0,56	35	25,2	700	B78108-T3561-K	25					
0,68	35	25,2	530	B78108-T3681-K	25					
0,82	35	25,2	500	B78108-T3821-K	25					

cont'd on page 346

EMI/RFI Suppression Chokes

L	Quality at measuring frequency		I _n at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	MHz				mA	Min. qty. +	50 +	100 +	500 +
Inductance tolerance ± 10 %										
1,0	35	25,2	630	B78108-T1102-K	25					
1,2	40	7,96	610	B78108-T1122-K	25					
1,5	40	7,96	570	B78108-T1152-K	25					
1,8	40	7,96	540	B78108-T1182-K	25					
2,2	40	7,96	520	B78108-T1222-K	25					
2,7	40	7,96	480	B78108-T1272-K	25					
3,3	45	7,96	420	B78108-T1332-K	25					
3,9	45	7,96	400	B78108-T1392-K	25					
4,7	45	7,96	380	B78108-T1472-K	25					
5,6	50	7,96	260	B78108-T1562-K	25					
6,8	50	7,96	250	B78108-T1682-K	25					
8,2	55	7,96	240	B78108-T1822-K	25					
10	55	7,96	230	B78108-T1103-K	25					
12	55	2,52	190	B78108-T1123-K	25					
15	55	2,52	185	B78108-T1153-K	25					
18	55	2,52	175	B78108-T1183-K	25					
22	60	2,52	170	B78108-T1223-K	25					
27	60	2,52	160	B78108-T1273-K	25					
33	60	2,52	150	B78108-T1333-K	25					
39	60	2,52	140	B78108-T1393-K	25					
47	60	2,52	100	B78108-T1473-K	25					
56	60	2,52	100	B78108-T1563-K	25					
68	60	2,52	95	B78108-T1683-K	25					
82	60	2,52	90	B78108-T1823-K	25					
100	60	2,52	85	B78108-T1104-K	25					

These HF chokes (type MCC) are also available as assortment:

HF choke assortment	Series	Ordering code	Min. qty.	Price per assortment				
				Min. qty. +	10 +			
10 items each/value Range 0,1 ... 100 μH	E 12	B78108-X5	1					

EMI/RFI Suppression Chokes

HF chokes LBC (Large Bobbin Core)

With ferrite drum core and flame-retardant lacquer coating

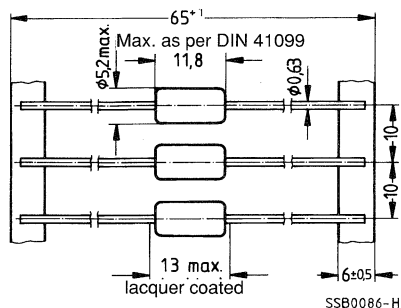
Color coding as per IEC 62

Tape packaging in acc. with IEC 286-1

Rated inductance 1 ... 100000 μ H

Rated current 0,02 ... 2,2 A

IEC climatic category 55/125/56



Min. lead spacing: 15 mm

Dimensions in mm

L	Quality at measuring frequency		I _R at 40 °C	Ordering code	Min. qty.	Price per 100				
	Q _{min}	kHz				A	Min. qty. +	50 +	100 +	500 +
μH										
Inductance tolerance ± 10 %										
▼ 1	40	7960	2,2	B82144-A2102-K	20					
▼ 2,2	40	7960	1,9	B82144-A2222-K	20					
▼ 4,7	40	7960	1,6	B82144-A2472-K	20					
▼ 10	60	2520	1,4	B82144-A2103-K	20					
▼ 22	50	2520	1,1	B82144-A2223-K	20					
Inductance tolerance ± 5 %										
▼ 47	40	2520	0,8	B82144-A2473-J	20					
▼ 100	50	796	0,6	B82144-A2104-J	20					
▼ 220	50	796	0,4	B82144-A2224-J	20					
▼ 470	40	796	0,28	B82144-A2474-J	20					
▼ 1000	60	252	0,2	B82144-A2105-J	20					
▼ 2200	60	252	0,14	B82144-A2225-J	20					
▼ 4700	60	252	0,09	B82144-A2475-J	20					
▼ 10000	50	79	0,06	B82144-A2106-J	20					
▼ 22000	50	79	0,04	B82144-A2226-J	20					
▼ 47000	40	79	0,03	B82144-A2476-J	20					
▼ 100000	40	79	0,02	B82144-A2107-J	20					

EMI/RFI Suppression Chokes

VHF chokes

With single-layer winding on tubular core and insulating sleeve

Tape packaging in acc. with IEC 286-1

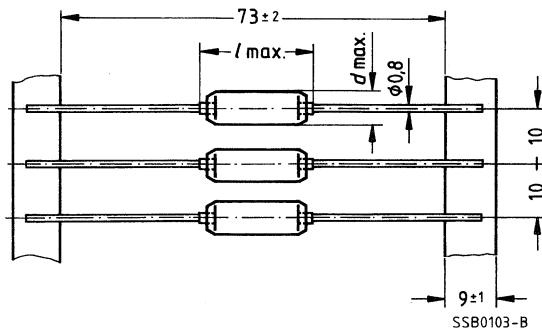
Rated inductance 1 ... 420 μ H

Rated voltage 500 Vdc/ac

Rated current 0,15 ... 6 A

IEC climatic category 55/125/56

Approvals:



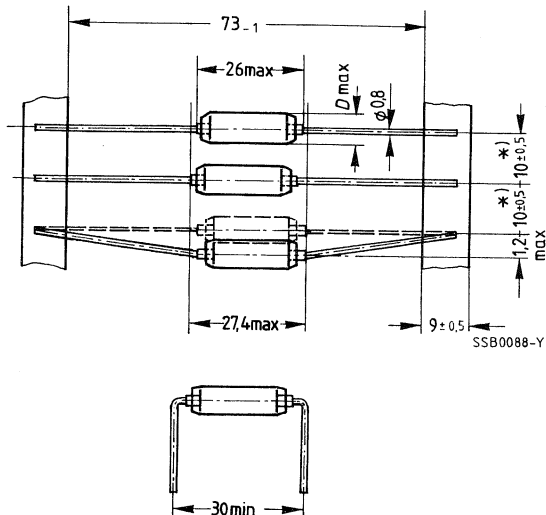
I/R	L _R	R _{cold} at + 20 °C (typ.)	Dimen- sions d × l	Ordering code	Min. qty.	Price each				
						Min. qty. +	100 +	250 +	500 +	1000 +
A	μ H	Ω	mm							
0,15	80	11	5 × 16	B82131-A5151-M	20					
0,15	160	17	5,5 × 21	B82132-A5151-M	20					
0,15	350	21	7,5 × 26	B82133-A5151-M	20					
0,15	420	19	7,5 × 31	B82134-A5151-M	20					
0,3	40	4,1	5 × 16	B82131-A5301-M	20					
0,3	70	5,7	5,5 × 21	B82132-A5301-M	20					
0,3	160	6,5	7,5 × 26	B82133-A5301-M	20					
0,3	210	6,4	7,5 × 31	B82134-A5301-M	20					
0,4	27	2	5 × 16	B82131-A5401-M	20					
0,4	50	3	5,5 × 21	B82132-A5401-M	20					
0,4	130	4,8	7,5 × 26	B82133-A5401-M	20					
0,4	150	3,5	7,5 × 31	B82134-A5401-M	20					
0,7	14	0,76	5 × 16	B82131-A5701-M	20					
0,7	23	0,73	5,5 × 21	B82132-A5701-M	20					
0,7	55	1,20	7,5 × 26	B82133-A5701-M	20					
0,7	60	0,77	7,5 × 31	B82134-A5701-M	20					
1,5	6	0,19	5 × 16	B82131-A5152-M	20					
1,5	8	0,16	5,5 × 21	B82132-A5152-M	20					
1,5	25	0,32	7,5 × 26	B82133-A5152-M	20					
1,5	30	0,30	7,5 × 31	B82134-A5152-M	20					

EMI/RFI Suppression Chokes

I _R	L _R	R _{cold} at + 20 °C (typ.)	Dimen- sions d × l	Ordering code	Min. qty.	Price each				
						Min. qty. +	100 +	250 +	500 +	1000 +
A	μH	Ω	mm							
2	3	0,09	5 × 16	B82131-A5202-M	20					
2	6	0,11	5,5 × 21	B82132-A5202-M	20					
2	14	0,13	7,5 × 26	B82133-A5202-M	20					
2	20	0,15	7,5 × 31	B82134-A5202-M	20					
3	2	0,038	5 × 16	B82131-A5302-M	20					
3	3	0,035	5,5 × 21	B82132-A5302-M	20					
3	10	0,077	7,5 × 26	B82133-A5302-M	20					
3	12	0,090	7,5 × 31	B82134-A5302-M	20					
4	1	0,014	5 × 16	B82131-A5402-M	20					
4	2	0,020	5,5 × 21	B82132-A5402-M	20					
4	5	0,034	7,5 × 26	B82133-A5402-M	20					
4	7	0,033	7,5 × 31	B82134-A5402-M	20					
6	1	0,010	5,5 × 21	B82132-A5602-M	20					
6	3	0,019	7,5 × 26	B82133-A5602-M	20					

With single-layer winding on ferrite core and insulating sleeve

Approvals:  565-2



I_R	L_R	R_{cold} at + 20 °C (typ.)	Dimension D_{max}	Ordering code	Min. qty.	Price each				
A	μH	Ω	mm			Min. qty. +	100 +	250 +	500 +	1000 +
0,1	1200	34	6	B82111-E-C29	20					
0,2	680	14	6	B82111-E-C28	20					
0,3	470	6,5	6	B82111-E-C27	20					
0,5	220	2,6	6,5	B82111-E-C26	20					
1	100	0,65	6,5	B82111-E-C25	20					
1,5	56	0,3	6,5	B82111-E-C24	20					
2	40	0,18	7	B82111-E-C23	20					
3	22	0,07	7	B82111-E-C22	20					
4	12	0,04	7,5	B82111-E-C21	20					
6	7	0,02	7,5	B82111-E-C20	20					

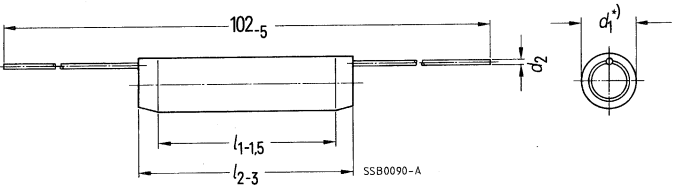
EMI/RFI Suppression Chokes

VHF chokes

With single-layer winding on ferrite core and insulating sleeve

Rated inductance 3 ... 25 µH
 Rated voltage 500 Vdc/ac
 Rated current 2 ... 10 A
 IEC climatic category 55/125/56

Approvals:



*) max.

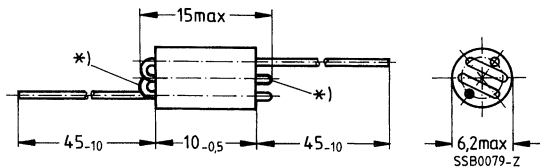
I/R	L _R	R _{cold} (typ.)	Dimen- sions d ₁ × l ₂ mm	Dim. d ₂ mm	Ordering code	Min. qty.	Price each				
							Min. qty. +	100 +	250 +	500 +	1000 +
A	µ H	m Ω									
2	17	63	7,0 × 18,3	0,45	B82111-B-C14	20					
3	8	25	7,0 × 18,3	0,63	B82111-B-C13	20					
3	13	24	6,5 × 24,5	0,67	B82111-B-C19	20					
3	20	54	6,0 × 24,5	0,5	B82111-B-C20	20					
3	25	46	8,5 × 28,5	0,63	B82111-B-C24	20					
4	6	17	7,5 × 18,3	0,75	B82111-B-C12	20					
4	11	20	6,5 × 24,5	0,71	B82111-B-C18	20					
4	15	24	8,5 × 28,5	0,75	B82111-B-C23	20					
6	4	14	7,5 × 18,3	0,8	B82111-B-C11	20					
6	6	10	7,0 × 24,5	0,95	B82111-B-C17	20					
6	9	12	9,0 × 28,5	0,95	B82111-B-C22	20					
9	3	6	7,5 × 24,5	1,2	B82111-B-C16	20					
10	5	5	9,5 × 28,5	1,3	B82111-B-C21	20					

VHF chokes

With 6-aperture ferrite core,
without insulating sleeve

Rated current max. 1 A
IEC climatic category 55/120/21

Approvals:



*) with insulating sleeve

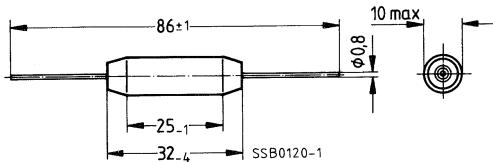
f_R MHz	Z at f_R Ω	Core material	Ordering code	Min. qty.	Price each				
					Min. qty. +	100 +	250 +	500 +	1000 +
60	900	N 4	B82114-R-A4	25					
100	800	M 11	B82114-R-A1	25					

EMI/RFI Suppression Chokes

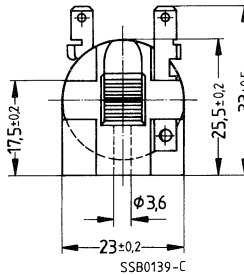
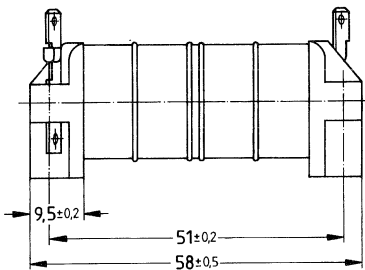
I core single chokes

Rated inductance	100 μ H ... 47 mH
Rated voltage	250 Vac and 380 Vac
Rated current	0,1 ... 10 A
IEC climatic category	B82500: 40/110/21 B82503: 40/125/56

B82500-C-A2 ... -A10



B82503-U-A5 ... -A14



Tab connector A 4,8 × 0,8
DIN 46244 VZN

Dimensions in mm

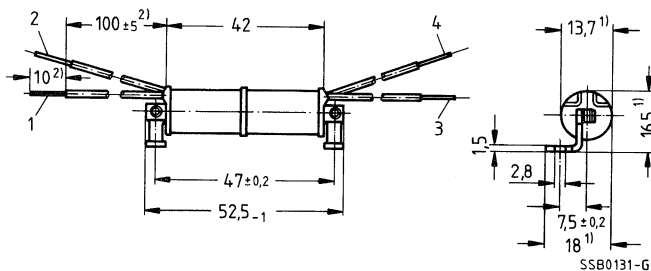
I/R	L _R	R _{dc} (typ.)	Ordering code	Min. qty.	Price each				
A		Ω			Min. qty. +	25 +	50 +	100 +	
250 Vac									
Approvals applied for									
0,2	3,9 mH	20	B82500-C-A2	5					
0,5	820 μH	2,5	B82500-C-A5	5					
1	330 μH	0,7	B82500-C-A8	5					
2	120 μH	0,2	B82500-C-A10	5					
380 Vac									
Approvals:					Min. qty. +	10 +	20 +	50 +	100 +
									
0,5	47 mH	10	B82503-U-A5	3					
1	15 mH	2,7	B82503-U-A8	3					
2	3,3 mH	0,7	B82503-U-A10	3					
4	680 μH	0,2	B82503-U-A12	3					
6	330 μH	0,1	B82503-U-A13	3					
10	100 μH	0,03	B82503-U-A14	3					

EMI/RFI Suppression Chokes

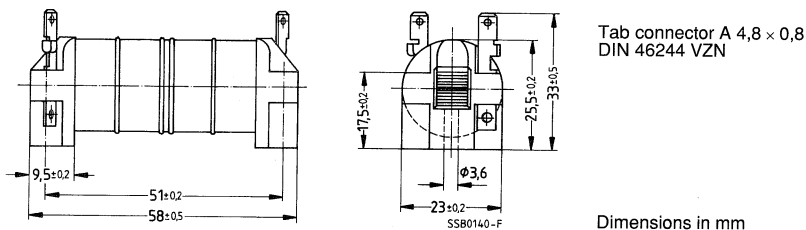
I core double chokes

Rated inductance	33 μ H ... 23 mH
Rated voltage	380 Vac
Rated current	0,2 ... 10 A
IEC climatic category	B82522 ...: 40/110/21
	B82523 ...: 40/125/56

B82522-C-A1 ... -A8



B82523-T-A8 ... -A14



I _R	L _R per winding	R _{dc} (typ.) per winding Ω	Ordering code	Min. qty.	Price each				
					Min. qty. +	20 +	50 +	100 +	250 +
0,2	23 mH	16	B82522-C-A2 ³⁾	1					
0,5	4,7 mH	3,2	B82522-C-A5 ³⁾	1					
1	1,25 mH	0,8	B82522-C-A8 ³⁾	1					

Approvals:



1	3,9 mH	1,4	B82523-T-A8	3					
2	1,2 mH	0,4	B82523-T-A10	3					
4	220 μ H	0,1	B82523-T-A12	3					
6	82 μ H	0,05	B82523-T-A13	3					
10	33 μ H	0,02	B82523-T-A14	3					

¹⁾ Max.

²⁾ Applies to lead ends

³⁾ Ratings comply with VDE 0565-2

EMI/RFI Suppression Chokes

I core single and double chokes

In sealed plastic case

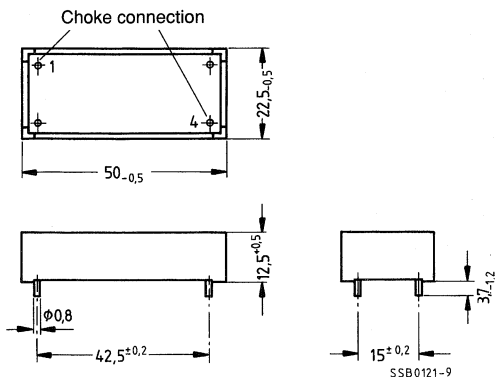
Ratings comply with VDE 0565-2

Rated voltage 500 Vac

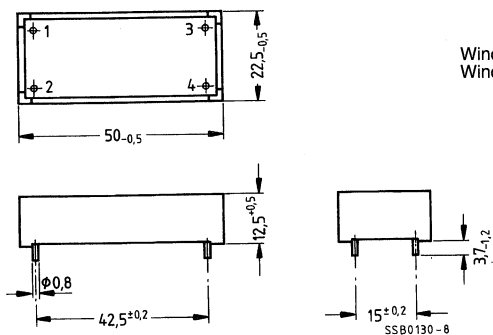
Rated current 1 A

IEC climatic category 40/125/56

B82502-W-C8



B82522-V-C8



Winding I: pins 1 and 2
Winding II: pins 3 and 4

Dimensions in mm

I / R	L _R per winding mH	R _{dc} (typ.) per winding Ω	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	25 +	50 +	100 +
I core single choke									
1	3,3	1,9	B82502-W-C8	3					
I core double choke					Min. qty. +	20 +	50 +	100 +	250 +
1	1,2	1	B82522-V-C8	3					

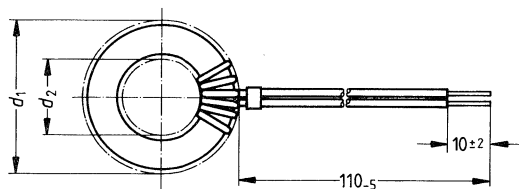
EMI/RFI Suppression Chokes

Neutral conductor chokes with ferrite core, no encapsulation

Rated current 16 and 20 A

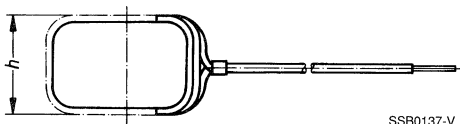
Upper category temperature 100 °C

Approvals:



Dimensions in mm

Type	d_1 max.	d_2 min.	h max.
B82302-A-A3	41	12	18
B82302-A-A5	21	5	18



SSB0137-V

I_R A	L_R per winding mH	Conduc- tor cross section mm ²	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	20 +	50 +	100 +
16	1,2	1	B82302-A-A5	1					
20	4,3	1,5	B82302-A-A3	1					

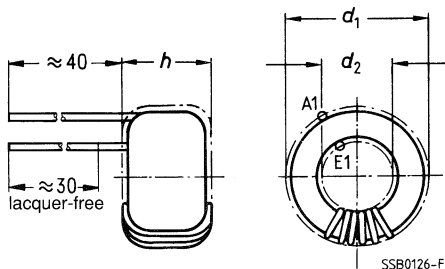
EMI/RFI Suppression Chokes

Thyristor chokes

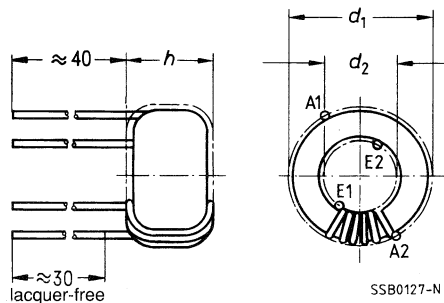
Ring core single and double chokes

Operating voltage	220 Vac
Rated current	2,5 ... 16 A
IEC climatic category	40/125/21

Single choke



Double choke



I _R	R _{dc} (typ.) per winding mΩ	Dimensions			Ordering code	Min. qty.	Price each				
		d ₁ mm	d ₂ mm	h mm			Min. qty. +	25 +	50 +	100 +	250 +
A											

Ring core single chokes

2,5	200	37,5	17	14	B82603-V-B11	10					
4	110	41	17	18	B82603-V-B12	10					
6	70	44,5	16	19	B82603-V-B13	10					
10	45	47,5	18	30	B82603-V-B14	10					
16	30	58	25	30	B82603-V-B15	10					

Ring core double chokes

4	60	41	17	18	B82623-V-B12	10					
16	20	59	19	30	B82623-V-B15	10					

Siemens ordering code	VAC designation
B82603-V-B11	FD 2,5-1N3-BR
B82603-V-B12	FD 4 -1N3-BR
B82603-V-B13	FD 6 -1N3-BR
B82603-V-B14	FD 10 -1N3-BR
B82603-V-B15	FD 16 -1N4-BR
B82623-V-B12	FD 4 -2N1-BR
B82623-V-B15	FD 16 -2N2-BR

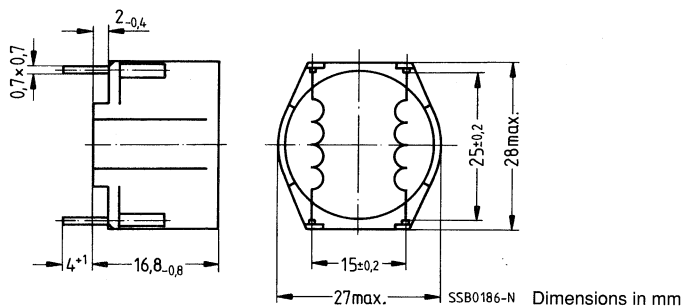
EMI/RFI Suppression Chokes

Ring core double chokes with powder core

In sealed plastic case
Case and sealing
flame-retardant as per UL94V-0

Rated voltage 250 Vac
Rated current 0,3 ... 3 A

Approvals:



I/R A	LR per winding mH	R _{dc} (typ.) per winding mΩ	Ordering code	Min. qty.	Price each				
					Min. qty. +	20 +	50 +	100 +	250 +
0,3	1,2	2,1	B82623-G1-A3	5					
0,5	1,0	1,2	B82623-G1-A5	5					
1,0	0,330	0,44	B82623-G1-A8	5					
2,0	0,082	0,110	B82623-G1-A10	5					
3,0	0,033	0,04	B82623-G1-A11	5					

Current-compensated ring core double chokes

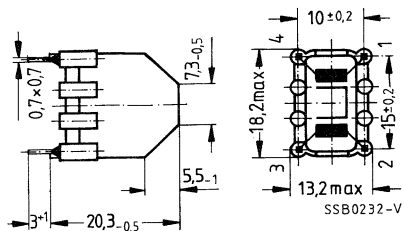
With ferrite core
In sealed plastic case
Case and sealing
flame-retardant as per UL94V-0

Rated inductance 0,4 ... 100 mH
Rated voltage 250 Vac
Rated current 0,3 ... 10 A
IEC climatic category 40/125/56

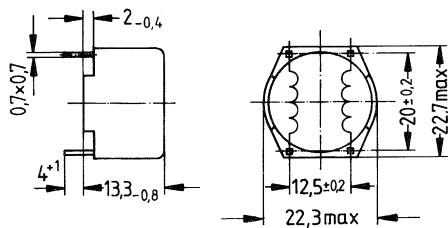
Approvals:



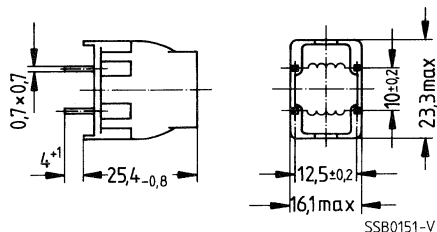
B82721-K, vertical version



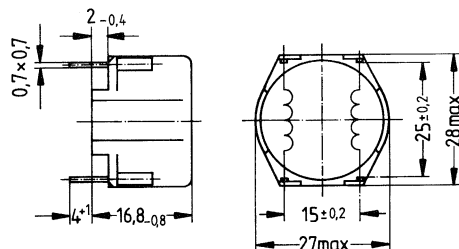
B82722-A, horizontal version



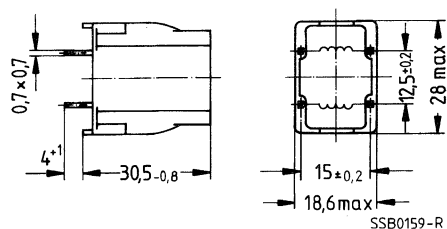
B82722-J, vertical version



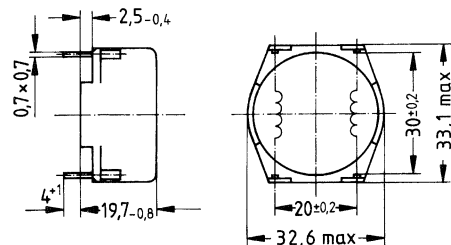
B82723-A, horizontal version



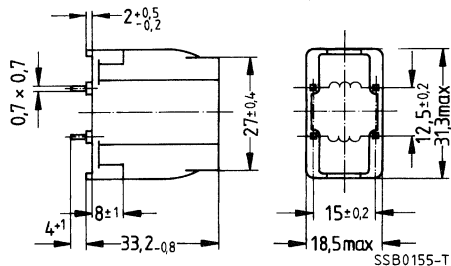
B82723-J, vertical version



B82724-A, horizontal version



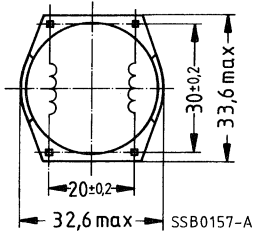
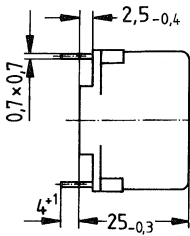
B82724-J, vertical version



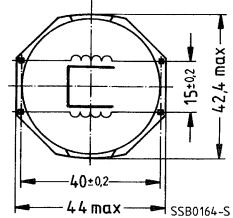
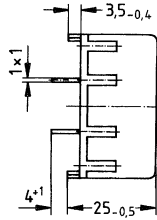
Dimensions in mm

EMI/RFI Suppression Chokes

B82724-B, horizontal version



B82725-A, horizontal version



Dimensions in mm

I_R	L_R per winding mH	R_{dc} (typ.) per winding mΩ	Ordering code	Min. qty.	Price each				
A					Min. qty. +	10 +	50 +	100 +	
▼ 0,4	39	2000	B82721-K2401-N20	5					
▼ 0,4	27	1700	B82721-K2401-N21	5					
▼ 0,5	18	1500	B82721-K2501-N1	5					
▼ 0,7	10	600	B82721-K2701-N20	5					
▼ 1,2	6,8	280	B82721-K2122-N20	5					
▼ 1,5	3,3	180	B82721-K2152-N1	5					
▼ 2,0	1,0	90	B82721-K2202-N1	5					
▼ 2,6	0,4	60	B82721-K2262-N1	5					
▼ 3,6	0,4	35	B82721-K2362-N1	5					
					Min. qty. +	20 +	50 +	100 +	250 +
0,3	47	2100	B82722-A2301-N1	5					
0,5	27	1400	B82722-A2501-N1	5					
1	10	540	B82722-A2102-N1	5					
2	2,2	140	B82722-A2202-N1	5					
3	1,2	56	B82722-A2302-N1	5					
0,3	47	2100	B82722-J2301-N1	5					
0,5	27	1400	B82722-J2501-N1	5					
1	10	540	B82722-J2102-N1	5					
2	2,2	140	B82722-J2202-N1	5					
3	1,2	56	B82722-J2302-N1	5					
					Min. qty. +	20 +	50 +	100 +	
0,5	56	2200	B82723-A2501-N1	5					
1	27	750	B82723-A2102-N1	5					
2	5,6	160	B82723-A2202-N1	5					
4	2,7	60	B82723-A2402-N1	5					

EMI/RFI Suppression Chokes

I _R A	L _R per winding mH	R _{dc} (typ.) per winding mΩ	Ordering code	Min. qty.	Price each				
					Min. qty. +	20 +	50 +	100 +	250 +
0,5	56	2200	B82723-J2501-N1	5					
1	27	750	B82723-J2102-N1	5					
2	5,6	160	B82723-J2202-N1	5					
4	2,7	60	B82723-J2402-N1	5					
0,5	82	2700	B82724-A2501-N1	5					
1	33	810	B82724-A2102-N1	5					
1,4	27	500	B82724-A2142-N1	5					
2	6,8	190	B82724-A2202-N1	5					
4	3,3	66	B82724-A2402-N1	5					
0,5	82	2700	B82724-J2501-N1	5					
1	33	810	B82724-J2102-N1	5					
1,4	27	500	B82724-J2142-N1	5					
2	6,8	190	B82724-J2202-N1	5					
4	3,3	66	B82724-J2402-N1	5					
0,5	100	2900	B82724-B2501-N1	5					
1	47	800	B82724-B2102-N1	5					
2	10	230	B82724-B2202-N1	5					
4	3,9	58	B82724-B2402-N1	5					
6	1,8	23	B82724-B2602-N1	5					
					Min. qty. +	20 +	50 +	100 +	
1	68	1300	B82725-A2102-N1	5					
2	18	350	B82725-A2202-N1	5					
4	6,8	87	B82725-A2402-N1	5					
6	3,9	41	B82725-A2602-N1	5					
8	2,7	22	B82725-A2802-N1	5					
10	1,8	13	B82725-A2103-N1	5					

From the choke series B82722 ... B82725 the following assortment is available:

Assortment of current-compensated chokes	Ordering code	Price per assortment 1 +
27 items 0,3 ... 10 A/1,2 ... 100 mH	B82700-X1	

EMI/RFI Suppression Chokes

Current-compensated ring core double chokes with shielding

In resin-sealed aluminum case

Mounting by threaded bolt or bottom strip

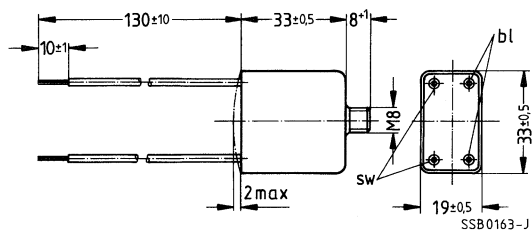
Rated voltage 250 Vac

Rated current 2 A und 4 A

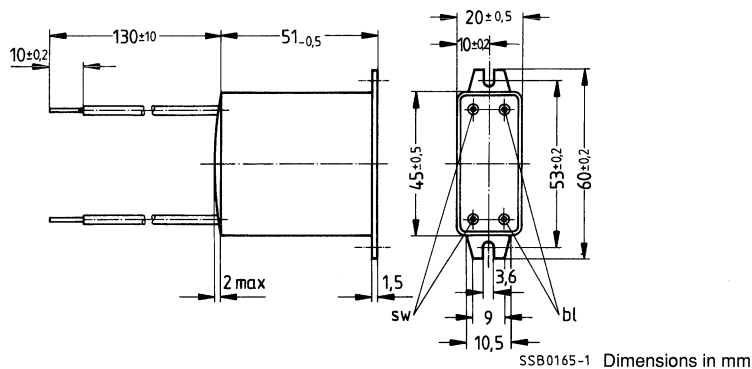
IEC climatic category 40/125/56

Ratings comply with VDE 0565-2

B82723-E1-A10



B82724-C1-A12



I/R	L_R per winding mH	R_{dc} (typ.) per winding mΩ	Ordering code	Min. qty.	Price each				
					Min. qty. +	20 +	50 +	100 +	
2	6,8	0,20	B82723-E1-A10	1					
4	6,8	0,12	B82724-C1-A12	1					

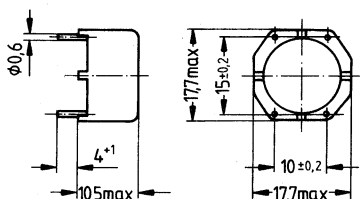
EMI/RFI Suppression Chokes

Current-compensated ring core double and quad chokes For data and signal lines

Rated voltage 80 V dc/42 Vac
Rated current 0,1 A
IEC climatic category 40/125/21

Ring core double chokes

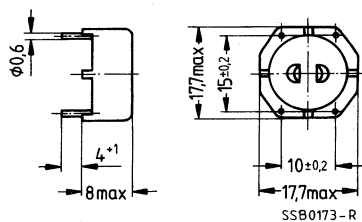
B82791-G12-A14, sealed



Pin configuration

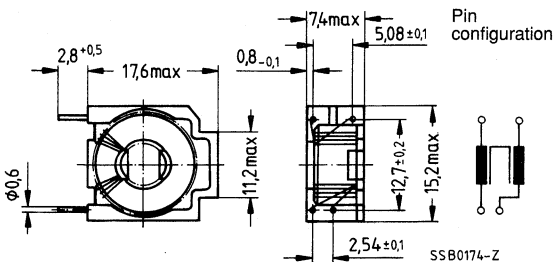


B82791-G15-A16, open



B82791-H15-A25, open

B82791-H15-A16, open



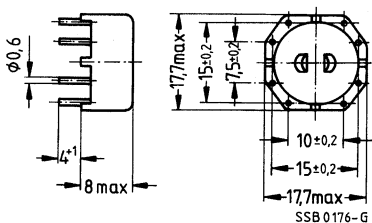
Pin configuration



Ring core quad chokes

B82791-G14-A16, open

B82791-G14-A17, open



Pin configuration



Dimensions in mm

EMI/RFI Suppression Chokes

I/R	L _R per winding mH	R _{dc} (typ.) per winding mΩ	Ordering code	Min. qty.	Price each				
					Min. qty. +	10 +	50 +	100 +	500 +
A									

Ring core double chokes

▼ 0,1	38	3000	B82791-G12-A14	5					
▼ 0,1	10	1300	B82791-H15-A25	5					
0,1	4,7	900	B82791-G15-A16	5					
0,1	4,7	900	B82791-H15-A16	5					

Ring core quad chokes

0,1	4,7	900	B82791-G14-A16	5					
▼ 0,1	0,2	180	B82791-G14-A17	5					

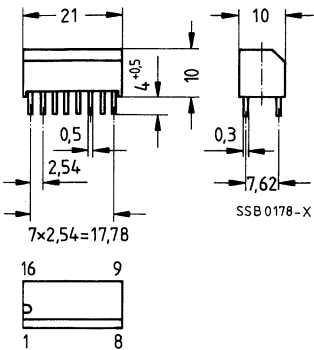
Data line chokes and filters are also available as assortment:

▼ Contents of assortment: 6 double chokes, horizontal 4 double chokes, vertical 4 quad chokes, horizontal 1 filter (16-pin DIP package)	Ordering code	Min. qty.	Price per assortment				
	B82791-X1	1					

EMI/RFI Suppression Filters

Filters for data and signal lines

EMC filter in 16-pin DIP package
Rated voltage 50 Vdc
Rated current 0,1 A per line
IEC climatic category 25/085/21



Dimensions in mm

I _R per winding A	Ordering code	Min. qty.	Price each				
			Min. qty. +	10 +	20 +	50 +	
0,1	B84551-A11-K90	1					

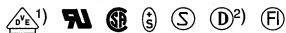
EMI/RFI Suppression Filters

Line filters for single-phase systems

Filters with IEC connector
Reduced size, normal attenuation
Application: office machines,
measuring and control
equipment

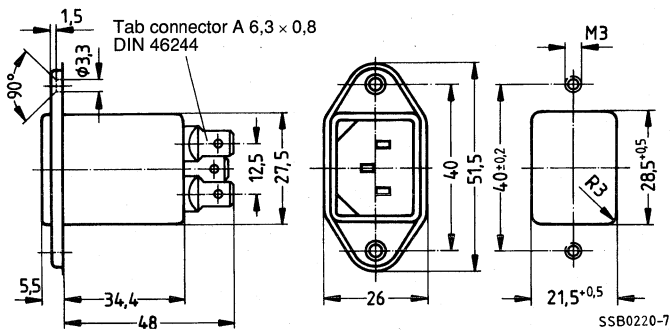
Rated voltage 250 Vac, up to 400 Hz
Rated current 1 ... 10 A
Leakage current < 0,5 mA at 250 Vac/50 Hz
IEC climatic category 25/085/21

Approvals:



Appliance inlet as per IEC 320 C14

Mounting section



SSB0220-7

Dimensions in mm

I/R	L _R	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	50 +	100 +	250 +
A	mH							
▼ 1	2 × 2,80	B84104-Z10-A10	5					
▼ 3	2 × 0,75	B84104-Z10-A30	5					
▼ 6	2 × 0,30	B84104-Z10-A60	5					
▼ 10	2 × 0,16	B84104-Z10-A110	5					

1) 10-A type: approval valid for up to 6 A

2) Not for 10 A

EMI/RFI Suppression Filters

Line filters for single-phase systems

Filters with IEC connector,
medium attenuation
Application: office machines,
measuring and control
equipment

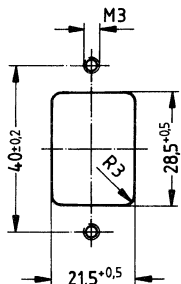
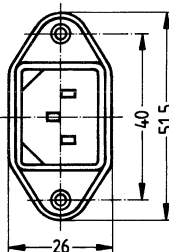
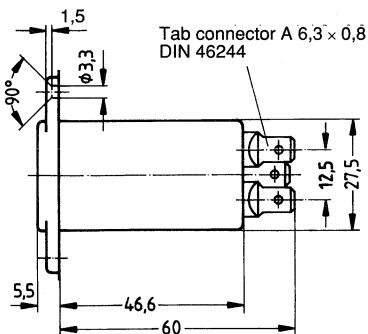
Rated voltage 250 Vac, up to 400 Hz
Rated current 1 ... 10 A
Leakage current < 0,5 mA at 250 Vac/50 Hz
IEC climatic category 25/085/21

Approvals:



Appliance inlet as per IEC 320 C14

Mounting section



SSB0226-L

Dimensions in mm

IR	LR	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	50 +	100 +	250 +
▼ 1	2 × 10	B84104-Z20-A10	5					
▼ 3	2 × 2	B84104-Z20-A30	5					
▼ 6	2 × 0,80	B84104-Z20-A60	5					
▼ 10	2 × 0,36	B84104-Z20-A110	5					

1) Not for 10 A

EMI/RFI Suppression Filters

Line filters for single-phase systems

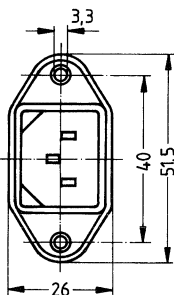
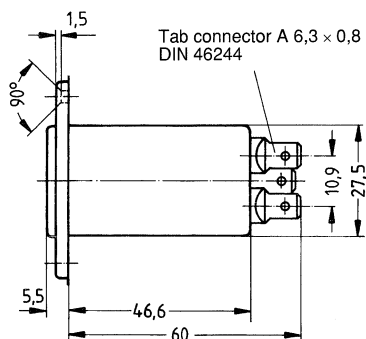
Filters with IEC connector,
high attenuation
Application: office machines,
measuring and control
equipment

Rated voltage 250 Vac, up to 400 Hz
Rated current 1 ... 10 A
Leakage current < 0.5 mA at 250 Vac/50 Hz
IEC climatic category 25/085/21

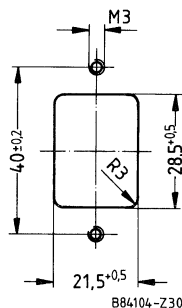
Approvals:



Appliance inlet as per IEC 320 C14



Mounting section



Dimensions in mm

I/R	L _R	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	50 +	100 +	250 +
▼ 1	2 × 10	B84104-Z30-A10	5					
▼ 3	2 × 3,1	B84104-Z30-A30	5					
▼ 6	2 × 1,2	B84104-Z30-A60	5					
▼ 10	2 × 0,36	B84104-Z30-A110	5					

EMI/RFI Suppression Filters

Line filters for single-phase systems

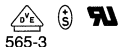
Application: switch-mode power supplies of medium performance, prefiltering in EDP systems

Rated voltage 115/250 Vac, 50/60 Hz

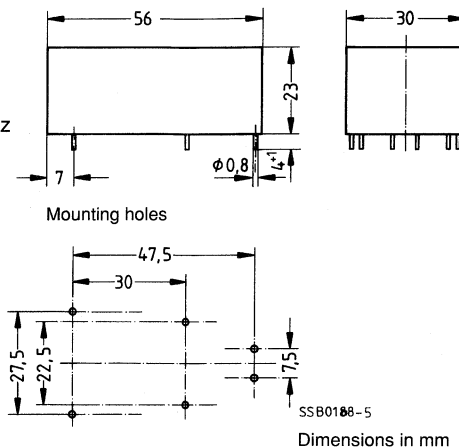
Rated current 0,5 ... 4 A

IEC climatic category 25/085/21

Approvals:



Approval applied for: CSA



I/R	Ordering code	Min. qty.	Price each				
			Min. qty. +	20 +	50 +	100 +	250 +
A							
0,5	B84110-A-A5	3					
1	B84110-A-A10	3					
2	B84110-A-A20	3					
4	B84110-A-A40	3					

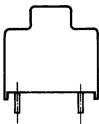
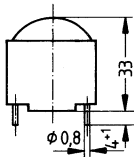
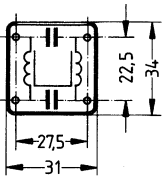
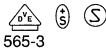
EMI/RFI Suppression Filters

Line filter for single-phase systems

Application: TV, switch-mode power supplies
up to 100 W, prefiltering in EDP systems

Rated voltage 250 Vac
Rated current 1,4 A
IEC climatic category 25/085/21

Approvals:



SSB0194-E

Dimensions in mm

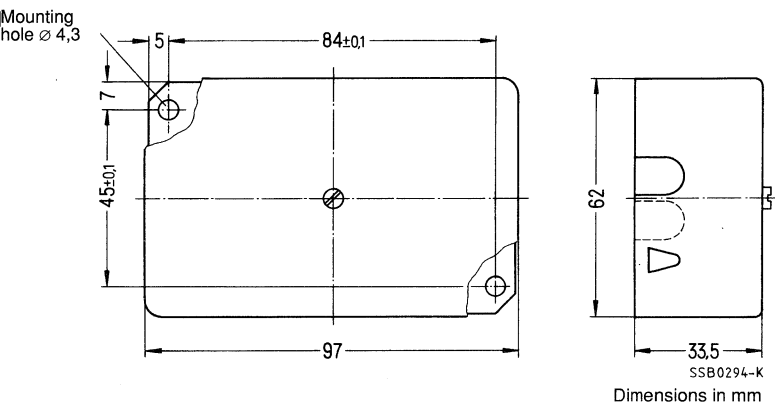
/R A	Ordering code	Min. qty.	Price each				
			Min. qty. +	20 +	50 +	100 +	250 +
1,4	B84110-B-A14	5					

EMI/RFI Suppression Filters

Line filters for single-phase systems

With I core double choke and
broadband multiple-section capacitor
Ratings comply with VDE 0565-3
Connection by terminals incorporated
into the line

Rated voltage 250 Vdc/250 Vac, 50/60 Hz
Rated current 0,5 ... 6 A
IEC climatic category 25/085/21



I _R	Ordering code	Min. qty.	Price each			
			Min. qty. +	10 +	20 +	50 +
A						
0,5	B84101-C10	1				
1	B84101-C20	1				
2	B84101-C30	1				
2	B84101-C140	1				
4	B84101-C150	1				
4	B84101-C60	1				
6	B84101-C180	1				

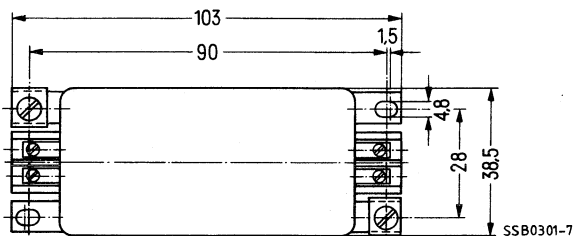
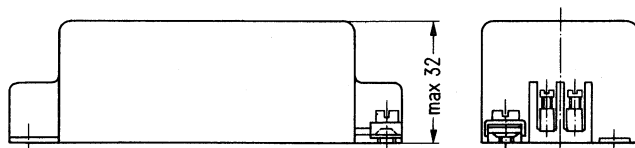
EMI/RFI Suppression Filters

Line filters for single-phase systems

With I core double choke (B84102-C)
or current-compensated ring core choke (B82102-K)
Connection by terminals with wire protection

Rated voltage 250 Vdc/250 Vac, 50/60 Hz
Rated current 0,5 ... 6 A
IEC climatic category 25/085/21

Approvals:



Dimensions in mm

I/R A	Ordering code	Min. qty.	Price each				
			Min. qty. +	10 +	20 +	50 +	
0,5	B84102-C20	1					
1	B84102-C30	1					
2	B84102-C40	1					
4	B84102-C50	1					
1	B84102-K30 ¹⁾	1					
2	B84102-K40 ¹⁾	1					
4	B84102-K50 ¹⁾	1					
6	B84102-K160 ¹⁾	1					

¹⁾ Ratings as per VDE 0565-3

EMI/RFI Suppression Filters

Line filters for single-phase systems

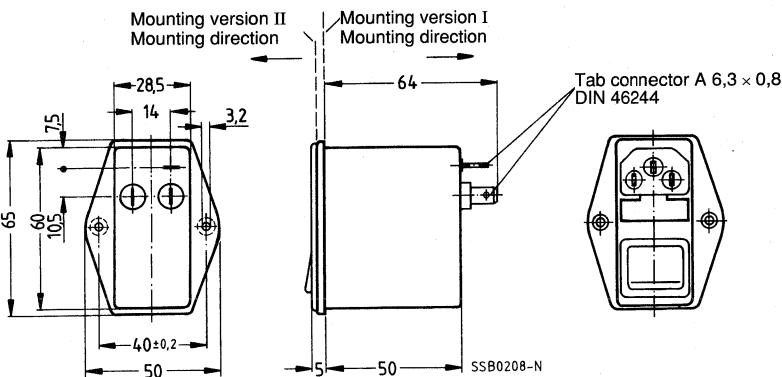
With IEC connector, fuse holder and switch,
plus an additional symmetrically operating choke

Rated voltage 115/250 Vac, 50/60 Hz

Rated current 1 A und 3 A

IEC climatic category 25/085/21

Approvals:



Dimensions in mm

I/R	Ordering code	Min. qty.	Price each				
			Min. qty. +	10 +	25 +	50 +	100 +
A							
1	B84103-S1-A10	1					
3	B84103-S1-A30 ¹⁾	1					

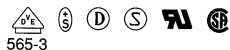
¹⁾ Approvals: VDE, CSA

Line filters for single-phase systems SIFI A, standard filter series, normal attenuation

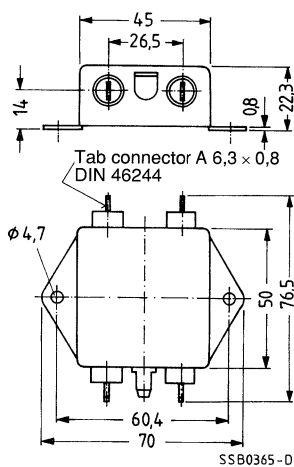
In shielded aluminum case with
flame-retardant sealing

Rated voltage 115/250 Vac, 50/60 Hz
Rated current 1 ... 20 A
IEC climatic category 25/085/21

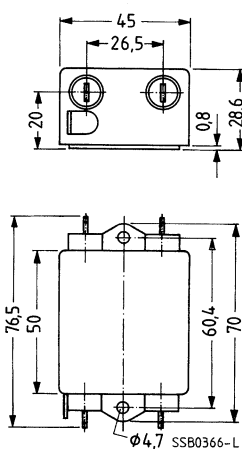
Approvals:



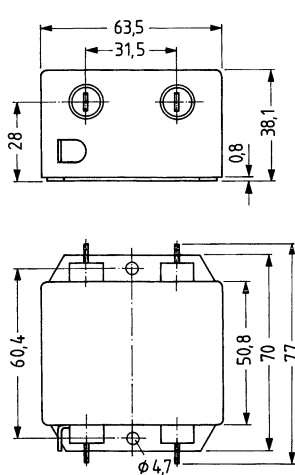
Outline drawing A1



Outline drawing B1



Outline drawing B2



SSB0245-S
Dimensions in mm

I/R	Outline drawing	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	100 +
A	1	A1	B84111-A-A10	2				
	2	A1	B84111-A-A20	2				
	3	A1	B84111-A-A30	2				
6 10 20	B1	B84111-A-B60	2					
	B1	B84111-A-B110	2					
	B2	B84111-A-B120	2					

Line filters for single-phase systems

SIFI B, standard filter series, enhanced attenuation

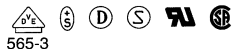
In shielded aluminum case with
flame-retardant sealing

Rated voltage 115/250 Vac, 50/60 Hz

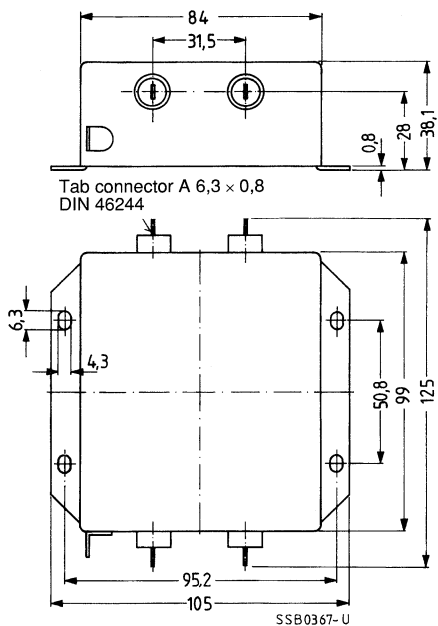
Rated current 1 ... 20 A

IEC climatic category 25/085/21

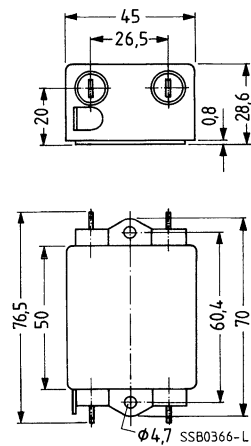
Approvals:



Outline drawing A4

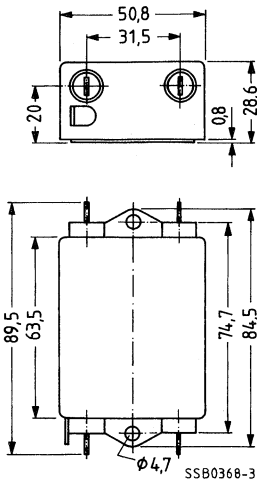


Outline drawing B1

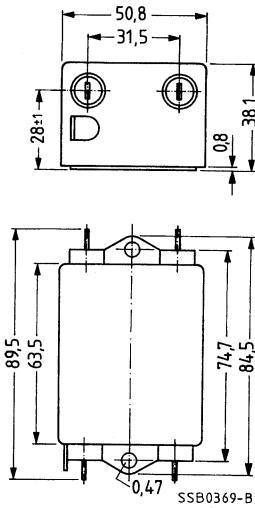


Dimensions in mm

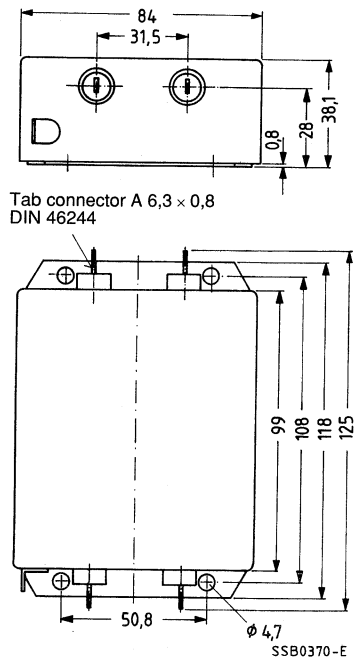
Outline drawing B3



Outline drawing B4



Outline drawing B7



Tab connector A 6,3 × 0,8
DIN 46244

Dimensions in mm

I/R	Outline drawing	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	100 +
20	A4	B84112-B-A120	1					
1	B1	B84112-B-B10	2					
2	B1	B84112-B-B20	2					
3	B3	B84112-B-B30	2					
6	B3	B84112-B-B60	2					
10	B4	B84112-B-B110	2					
20	B7	B84112-B-B120	2					

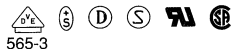
EMI/RFI Suppression Filters SIFI

Line filters for single-phase systems SIFI C, standard filter series, extra-high attenuation

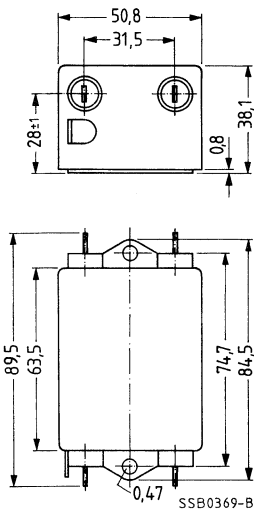
In shielded aluminum case with
flame-retardant sealing

Rated voltage 115/250 Vac, 50/60 Hz
Rated current 3 ... 10 A
IEC climatic category 25/085/21

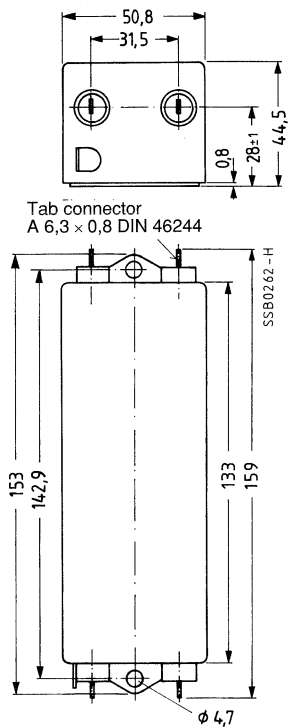
Approvals:



Outline drawing B4



Outline drawing B8



Dimensions in mm

/R	Outline drawing	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	100 +
3	B4	B84113-C-B30	1					
6	B8	B84113-C-B60	1					
10	B8	B84113-C-B110	1					

Line filters for single-phase systems SIFI D, standard filter series, high attenuation

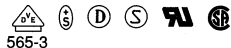
In shielded aluminum case with
flame-retardant sealing

Rated voltage 115/250 Vac, 50/60 Hz

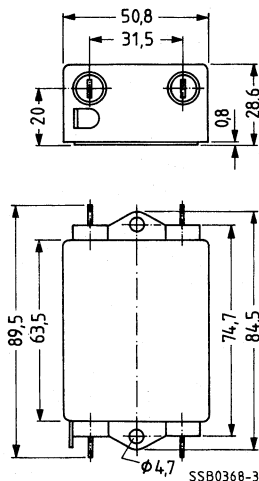
Rated current 1 ... 10 A

IEC climatic category 25/085/21

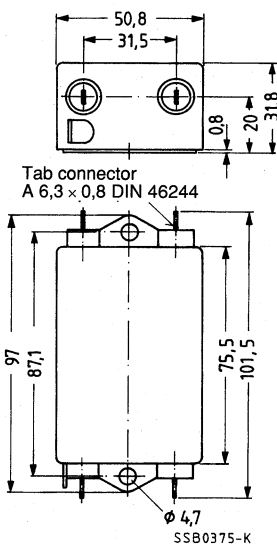
Approvals:



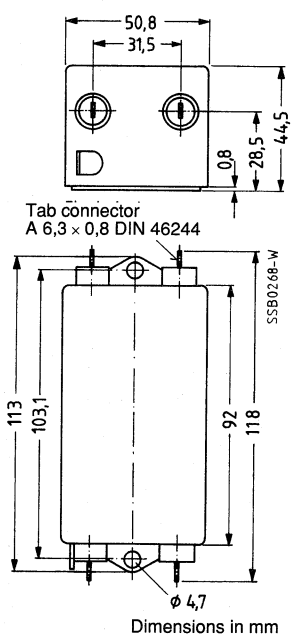
Outline drawing B3



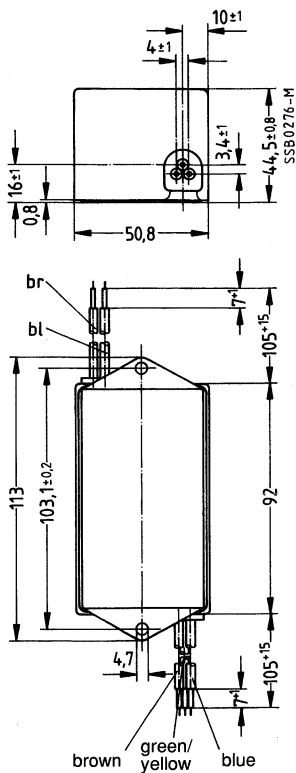
Outline drawing B5



Outline drawing B6



Outline drawing L9



Dimensions in mm

Litz wire 1,35 mm² (AWG 16 Style 1015)

/R	Outline drawing	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	100 +
1	B3	B84114-D-B10	1					
2	B3	B84114-D-B20	1					
3	B3	B84114-D-B30	1					
6	B5	B84114-D-B60	1					
10	B6	B84114-D-B110	1					
10	L9	B84114-D-L110	1					

Line filters for single-phase systems

SIFI E, standard filter series, extra-high attenuation, even in the range below 100 kHz

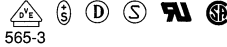
In shielded aluminum case with flame-retardant encapsulation

Rated voltage 115/250 Vac, 50/60 Hz

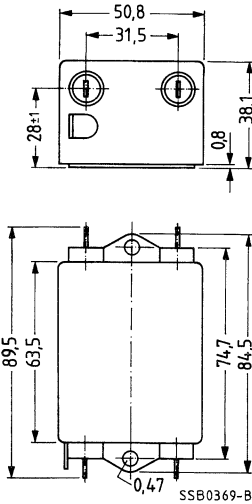
Rated current 3 ... 10 A

IEC climatic category 25/085/21

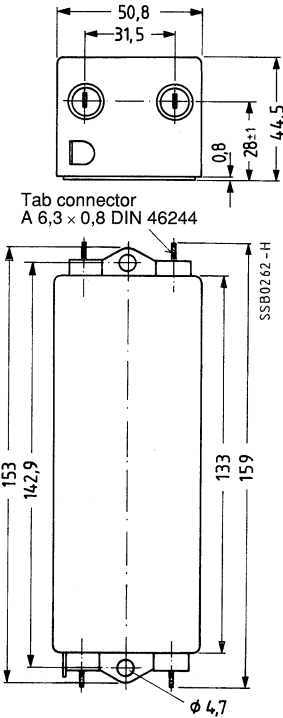
Approvals:



Outline drawing B4



Outline drawing B8



Dimensions in mm

I/R	Outline drawing	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	25 +	50 +	100 +
3	B4	B84115-E-B30	1					
6	B8	B84115-E-B60	1					
10	B8	B84115-E-B110	1					

EMI/RFI Suppression Filters

Line filters for three-phase systems

Filters with tab connectors or screw terminals

In shielded aluminum case with flame-retardant sealing

Rated voltage 250/440 Vac, 50/60 Hz

Rated current $4 \times 16 \text{ A} \dots 4 \times 63 \text{ A}$

IEC climatic category 25/085/21

Approvals:

B84131-M3-A116



B84131-M1-G135



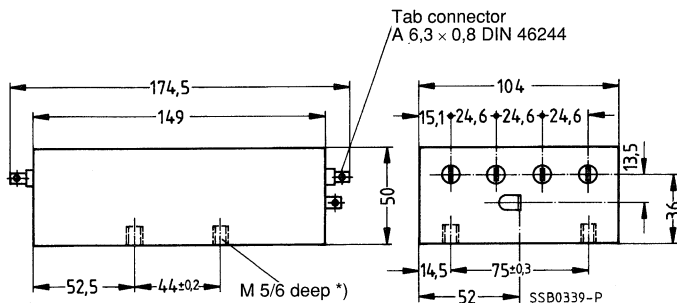
B84131-M2-G150



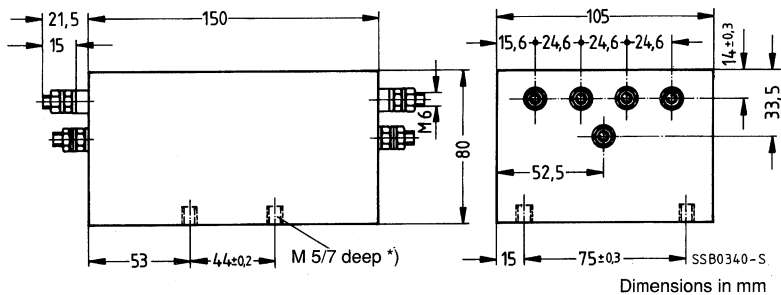
B84131-M2-G163



B84131-M3-A116

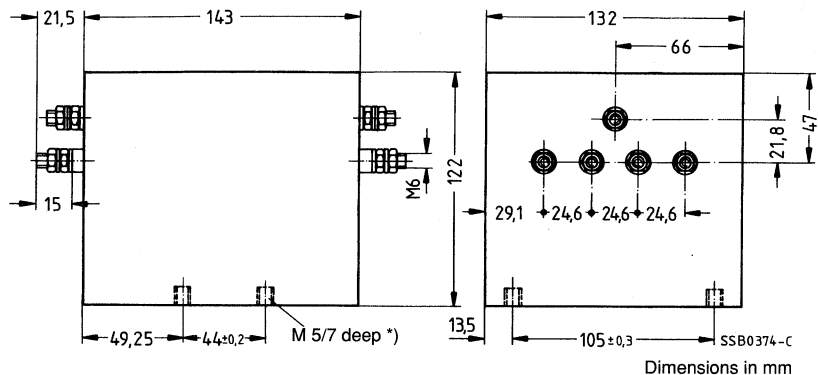


B84131-M1-G135



*) Also suitable for screws with thread 10-32 UNF

B84131-M2-G150, B84131-M2-G163



*) Also suitable for screws with thread 10-32 UNF

I/R	Ordering code	Min. qty.	Price each				
			Min. qty. +	10 +	20 +		
A							
4 × 16	B84131-M3-A116	1					
4 × 35	B84131-M1-G135	1					
4 × 50	B84131-M2-G150	1					
4 × 63	B84131-M2-G163	1					

EMI/RFI Suppression Filters

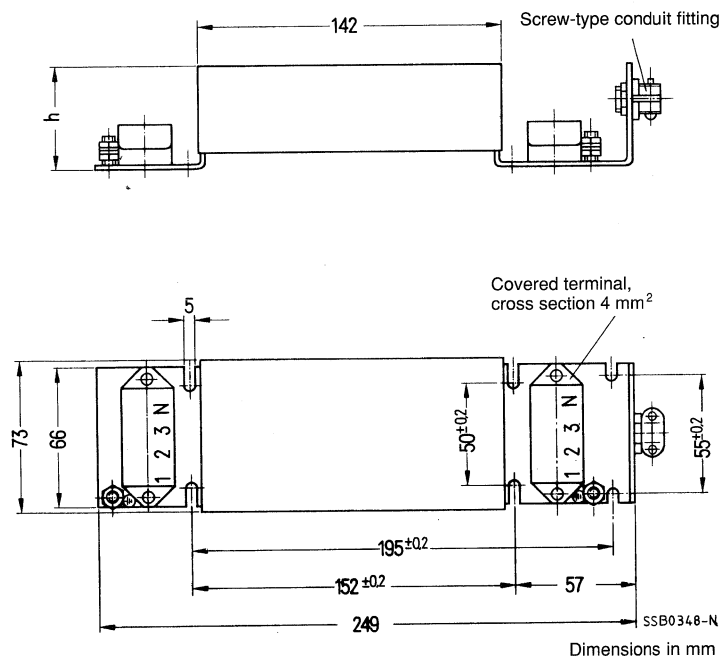
Line filters for three-phase systems

Filters with connecting terminals

Rated voltage 250/440 Vac, 50/60 Hz

Rated current 4 × 6 A ... 4 × 25 A

Approvals:



I _R	Height h mm	Ordering code	Min. qty.	Price each			
				Min. qty. +	10 +	20 +	
4 × 6	48	B84299-K53	1				
4 × 16	65	B84299-K55	1				
4 × 25	65	B84299-K56	1				

1) Not for 25-A filters

Electron Tubes and Surge Arresters

Product Group Index	Page
Special-purpose tubes	389
Lasers	393
Vacuum relays	396
Gas discharge displays	399
Surge arresters	401

Special-Purpose Tubes, Lasers, Vacuum Relays

Contents	Type	Page
The tubes are listed in alphanumerical order. The type of tube is identified by the first block of the ordering code.		
Amplifier tubes		
Long-range communications tubes	Q 31	389
Special amplifier tubes	Q 32	
Power grid tubes		
Generator tubes, transmitting tubes	Q 51/Q 52/Q 53	
Low-power grid tubes	Q 54	
Gas-filled tubes		
Thyratrons	Q 61	
Ignitrons	Q 64	
High-voltage rectifier tubes	Q 65	
Voltage regulator tubes	Q 66	
Lasers		
Laser tubes	LGR 7621 S, LGR 7634 LGR 7655	393
Laser modules	LGK 7634, LGK 7655, LGK 7672	393
Minilaser-delta	Q 4001-K 7079	394
Power supply units	LGN 7461A, LGN 7463 LGN 7465, LGN 7467A	395
High-voltage connector for power supply units		395
Vacuum relays		
	Series 100	396
	Series 300	397
	Series 400	398
Gas discharge displays	ZM 1180, ZM 1182, ZM 1336	399

▼ Newly included in this edition

Generator tube	RS 3021 CJ	390
Power supply units	LGN 7461A, LGN 7467A	395

Further technical literature

Data Book "Transmitting Tubes", B5-B3530-X-X-7600
Data Book "Accessories for Transmitting Tubes", B/2692-101
Short Form Catalog " VHF Power Tetrodes for Broadcast Transmitters", B6-P4202-X-X-7400
Short Form Catalog "Transmitting and Generator Tubes", B6-P4207-X-X-7400
Data Book "Generator Tubes and Accessories", B6-P4206-X-X-7600
Data Book "Travelling Wave Tubes", in preparation
Short Form Catalog "Travelling Wave Tube Amplifiers, Backward Wave Oscillators",
B5-B3362-X-X-7600
Short Form Catalog "Planar Tubes", B/2794-220
Data Sheet Collection "High-Power Travelling Wave Tubes for Satellite Earth Stations",
B6-P4604-X-X-7600
Short-Form Catalog "Vacuum Relays", B5-B3358-X-X-7600
Off-Print "More Power from New YH 1421 Travelling Wave Tube", B6-P4606-X-X-7600
Short Form Catalog "CO₂ Waveguide Lasers", B6-P8807-X-X-7400
Data Sheet Collection "Argon Ion Lasers", B6-P8807-X-X-7600

Special-Purpose Tubes

Special-purpose tubes are preferably used in RF/AF amplifiers, for pulse operation, modulation, in VHF and TV transmitters as well as for industrial heating.

Type	Ordering code	Price each		
		1 +	10 +	50 +
☐ C 3 m	Q31-X409			
☐ D 3a	Q31-X601			
☐ E 80 CC	Q32-X801			
☐ E 80 CF	Q32-X832			
☐ E 81 CC	Q32-X802			
☐ E 81 L	Q32-X822			
☐ E 82 CC	Q32-X803			
☐ E 83 CC	Q32-X804			
☐ E 83 F	Q32-X824			
☐ E 84 L	Q32-X805			
☐ E 86 C	Q32-X806			
☐ E 88 C	Q32-X808			
☐ E 88 CC	Q32-X807			
☐ E 91 AA	Q32-X809			
☐ E 130 L	Q32-X830			
☐ E 180 F	Q32-X821			
☐ E 182 CC	Q32-X833			
☐ E 188 CC	Q32-X839			
☐ E 235 L	Q32-X811			
☐ E 236 L	Q32-X812			
☐ E 280 F	Q32-X813			
☐ E 810 F	Q32-X817			
☐ EF 800	Q32-X863			
☐ Gle 15000/1,5/6	Q65-X1305			
☐ OA 2	Q66-X7005			
☐ OB 2	Q66-X7001			
☐ OG 3	Q66-X6004			
☐ QE 06/50	Q54-X3054			
		1 +		
RS 533	Q52-X533			
RS 723	Q51-X723			
RS 733	Q51-X733			

Special-Purpose Tubes

Type	Ordering code	Price each		
		1 +	5 +	
RS 1002 A	Q54-X1002			
RS 1003	Q54-X1003			
RS 1006 B	Q54-X1006			
RS 1007	Q54-X1007			
		1 +	10 +	
☐ RS 1009	Q54-X1009			
		1 +	5 +	
RS 1016	Q54-X1016			
RS 1023 L	Q51-X1023			
RS 1026	Q54-X1026			
		1 +	10 +	
☐ RS 1029	Q54-X1029			
RS 1031 L	Q51-X1031			
RS 1034 L	Q51-X1034			
RS 1034 SK	Q53-X1034			
RS 1054 L	Q51-X1054			
RS 1054 SK	Q53-X1054			
RS 1091	Q54-X1091			
RS 2024 CL	Q51-X2024			
RS 2032 CL	Q51-X2032			
RS 3005 CJ	Q52-X3005			
RS 3005 CL	Q51-X3005			
RS 3010 CJ	Q52-X3010			
RS 3010 CL	Q51-X3010			
▼ RS 3021 CJ	Q52-X3021			
RS 3026 CJ	Q52-X3026			
RS 3026 CL	Q51-X3026			
RS 3040 CJ	Q52-X3040			
RS 3040 CL	Q51-X3040			

Special-Purpose Tubes

Type	Ordering code	Price each		
		1 +	10 +	
RS 3060 CJ	Q52-X3060			
RS 3060 CL	Q51-X3060			
RS 3150 CJ	Q52-X3150			
RS 3300 CJ	Q52-X3300			
Ste 1000/2,5/15	Q61-X3505			
☐ Ste 1300/01/05	Q61-X3501			
Ste 2500/05/2	Q61-X3503			
☐ Ste 5684	Q61-X2860			
☐ Ste 5727	Q61-X3510			
Stv 85/10	Q66-X6004			
Stv 108/30	Q66-X7001			
Stv 150/30	Q66-X7005			
ZX 1051	Q64-X2876			
ZX 1052	Q64-X2877			
☐ 2 D 21	Q61-X3501			
☐ 2 D 21 W	Q61-X3510			
☐ 85 A 2	Q66-X6004			
☐ 108 C 1	Q66-X7001			
☐ 150 C 2	Q66-X7005			
807	Q54-X3054			
866 A	Q65-X705			
5551	Q64-X2876			
5552	Q64-X2877			
5557	Q61-X3503			
5559	Q61-X3505			
☐ 5684	Q61-X2860			
☐ 5726	Q32-X809			
5727	Q61-X3510			
		1 +	5 +	
5866	Q54-X1006			
5867 A	Q54-X1026			
5868	Q54-X1016			

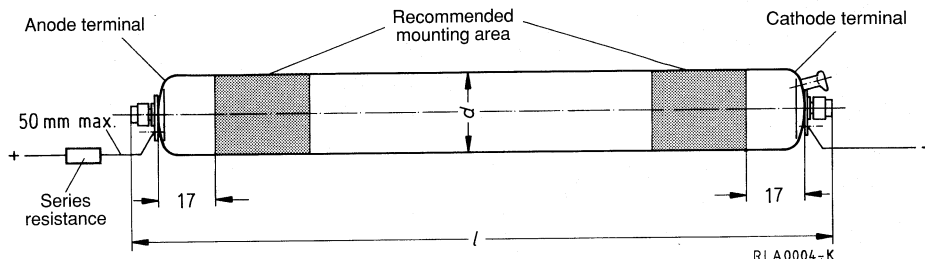
Special-Purpose Tubes

Type	Ordering code	Price each		
		1 +	10 +	
☐ 5894 ☐ 6057 ☐ 6085	Q54-X1009 Q32-X804 Q32-X801			
		1 +	5 +	
6155	Q54-X1007			
		1 +	10 +	50 +
☐ 6189 ☐ 6201 ☐ 6360 6686 ☐ 6688 6689 ☐ 6922 7119 ☐ 7308 ☐ 7320	Q32-X803 Q32-X802 Q54-X1029 Q32-X822 Q32-X821 Q32-X824 Q32-X807 Q32-X833 Q32-X839 Q32-X805			
		1 +	5 +	
7527	Q54-X1002			
		1 +	10 +	50 +
☐ 7534 ☐ 7643 ☐ 7721 ☐ 7722 7751 7788 ☐ 8223 8255 8562	Q32-X830 Q32-X832 Q31-X601 Q32-X813 Q32-X811 Q32-X817 Q32-X816 Q32-X808 Q32-X808			

HeNe Lasers

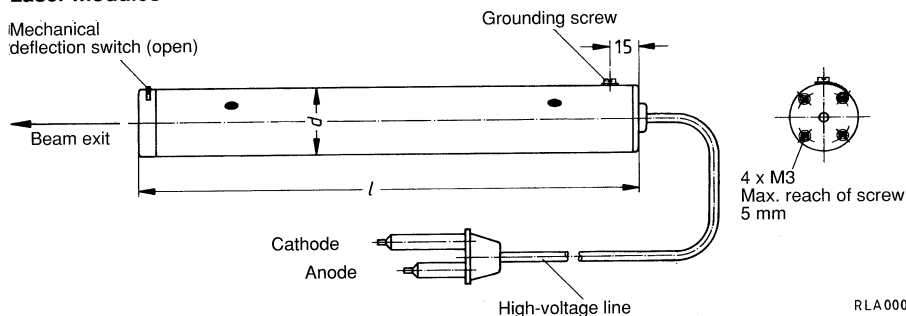
**HeNe laser tubes and complete modules
for bar code readers, laser printers,
film exposure, particle counting, surface
inspection and medical equipment**

Laser tubes



Type	Output power mW	Beam diameter mm	Divergence mrad	Series resistance k Ω	Dimensions $d \times l$ mm	Ordering code	Price each		
							1 +		
LGR 7621S ¹⁾	≥ 2 (TEM ₀₀)	0,75	$\leq 1,2$	≥ 68	30 $\times$ 255	Q4002-K7041			
LGR 7634 ¹⁾³⁾	≥ 2 (TEM ₀₀)	0,75	$\leq 1,2$	≥ 68	30 $\times$ 255	Q4002-K7634			
LGR 7655 ²⁾	$\geq 0,5$ (TEM ₀₀)	0,49	$\leq 1,7$	≥ 68	25 $\times$ 150	Q4002-K7655			

Laser modules



Type	Output power mW	Beam diameter mm	Divergence mrad	Dimensions $d \times l$ mm	Ordering code	Price each		
						1 +		
LGK 7634 ¹⁾³⁾	≥ 2 (TEM ₀₀)	0,75	$\leq 1,2$	35 $\times$ 280	Q4001-K7663			
LGK 7655 ²⁾	$\geq 0,5$ (TEM ₀₀)	0,49	$\leq 1,7$	35 $\times$ 170	Q4001-K7705			
LGK 7672 ¹⁾	≥ 2 (TEM ₀₀)	0,75	$\leq 1,2$	35 $\times$ 280	Q4001-K7672			

- 1) Matching power supplies: LGN 7463, input voltage 10 ... 14 Vdc
LGN 7461A, input voltage 110/220 Vac
LGN 7465, input voltage 10 ... 14 Vdc
LGN 7467A, input voltage 110/220 Vac
- 2) Matching power supplies:
- 3) > 500:1 linearly polarized

Minilaser-delta LG 7656

With the Minilaser-delta you can easily point out what you are talking about. A bright red light dot indicates exactly where to focus attention, on slide projections or overhead transparencies, for instance. It is equally suited to point to special sights at large distances, e.g. on guided tours through museums and plants. The Minilaser-delta has a range of 75 m (!) in daylight and of 500 m (!) in darkness.

You can select either a continuous or a blinking light signal to attract spontaneous attention. With the blinking mode you even save energy, which is supplied by a battery or a rechargeable accumulator. The Minilaser-delta is indispensable for professional presentations.

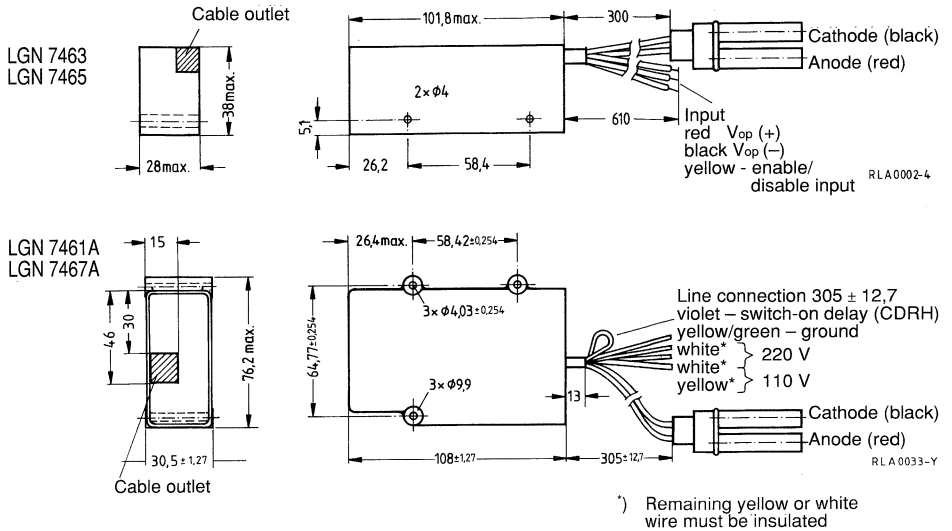


Approx.
weight: 150 g

Output power	Beam diameter ¹⁾	Service life	Operating temperature	Dimensions L x H x W	Ordering code	Price each		
mW	cm	h	°C	mm		1 +		
1	2,1	10 000	- 25 ... + 60	150 x 60 x 33	Q4001-K7079			

¹⁾ from 10 m

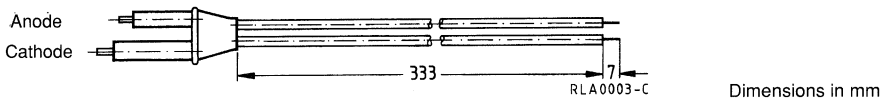
Power supply units



Type	Input voltage	Matching laser tube		Ordering code	Price each		
			laser module		1 +		
▼ LGN 7461A*)	110/220 Vac	LGR 7621S,	LGK 7634,	Q4004-K7121			
LGN 7463	10 ... 14 Vdc	LGR 7634	LGK 7672	Q4004-K7463			
LGN 7465	10 ... 14 Vdc	LGR 7621S,	LGK 7634,	Q4004-K7465			
▼ LGN 7467A*)	110/220 Vac	LGR 7634	LGK 7672	Q4004-K7127			
		LGR 7655	LGK 7655				
		LGR 7650,	LGK 7650,				
		LGR 7655,	LGK 7655,				
		LGR 7655S	LGK 7655S				

*) With VDE approval

High-voltage connector for power supplies



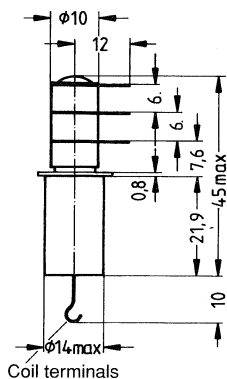
Designation	Ordering code	Price each		
		1 +		
LGN high-voltage connector	Q4007-K7947			

Vacuum Relays

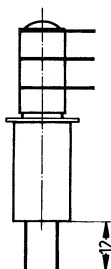
Major applications for vacuum relays are high-frequency circuits, switching under high load, and switching of high voltages.

Series 100

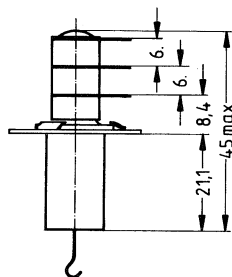
VR 111



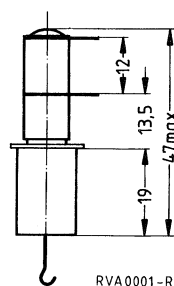
VR 113



VR 121



VR 141



Dimensions in mm

Coil voltage 26,5 Vdc

Type	Peak switching voltage ¹⁾	Max. contin. current (RMS) ¹⁾	Max. switching current ¹⁾	Max. switching power ¹⁾	Series resistance mΩ	Ordering code	Price each		
	kV	A	A	W			1 +	5 +	10 +
VR 111	2	8	0,5	100	≤ 25	Q37-X9			
VR 113 ²⁾	2	8	0,5	100	≤ 25	Q37-X16			
VR 121	2	8	0,5	100	≤ 25	Q37-X1			
VR 141	7,5	12	0,5	100	≤ 25	Q37-X10			

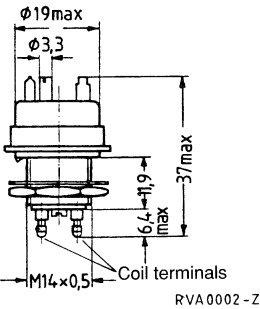
¹⁾ DC or 50 Hz

²⁾ Bistable

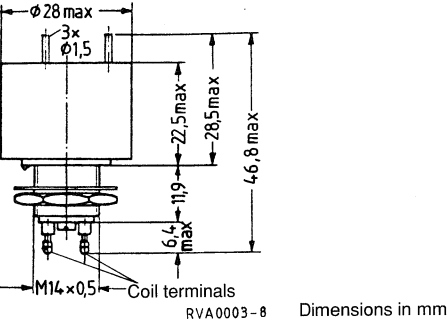
Vacuum Relays

Series 300

VR 311, VR 312



VR 313, VR 314



Coil voltage 26,5 Vdc

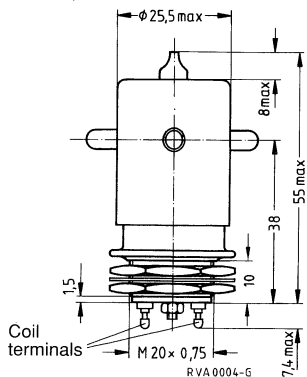
Type	Peak switching voltage ¹⁾ kV	Max. contin. current (RMS) ¹⁾ A	Max. switching current ¹⁾ A	Max. switching power ¹⁾ W	Series resistance mΩ	Ordering code	Price each		
							1 +	5 +	10 +
VR 311	3,5	18	0,5	100	≤ 10	Q37-X2			
VR 312	3,5	18	5	2000	≤ 25	Q37-X7			
VR 313	8	18	0,5	100	≤ 10	Q37-X25			
VR 314	8	18	5	2000	≤ 25	Q37-X12			

¹⁾ DC or 50 Hz

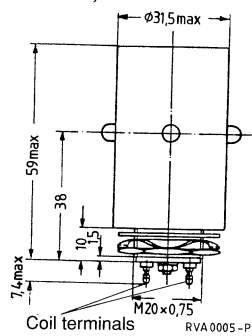
Vacuum Relays

Series 400

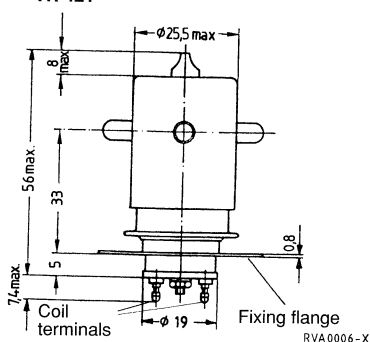
VR 411, VR 412



VR 413, VR 414



VR 421



Dimensions in mm

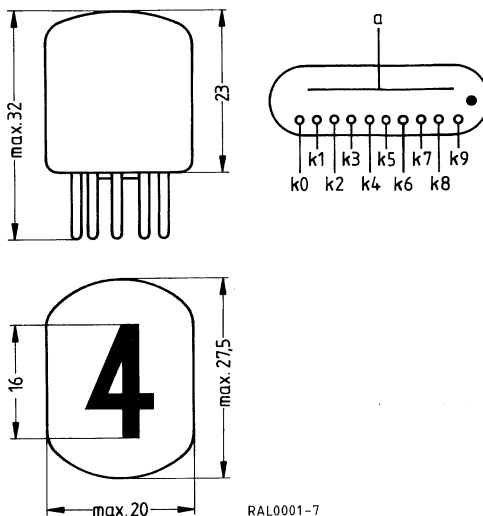
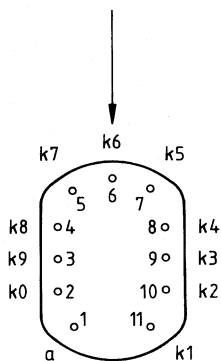
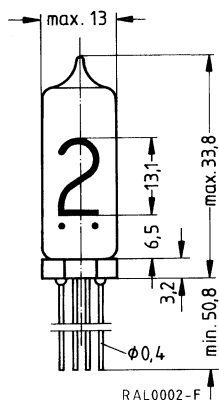
Coil voltage 26,5 Vdc

Type	Peak switching voltage ¹⁾	Max. cont. current (RMS) ¹⁾	Max. switch- ing current ¹⁾	Max. switching power ¹⁾	Series resis- tance	Ordering code	Price each		
	kV	A	A	W	mΩ		1 +	5 +	10 +
VR 411	12	50	0,5	100	≤ 12	Q37-X3			
VR 412	12	50	15	5000	≤ 25	Q37-X8			
VR 413	15	50	0,5	100	≤ 12	Q37-X27			
VR 414	15	50	15	5000	≤ 25	Q37-X17			
VR 421	12	50	0,5	100	≤ 12	Q37-X4			

¹⁾ DC or 50 Hz

ZM 1180
with color filter

ZM 1182
without color filter

[illegible]

Type	Ordering code	Price each		
		1 +		
ZM 1180 ¹⁾	Q73-X4873			
ZM 1182 ¹⁾	Q73-X4874			
Multiplex operation				
ZM 1336	Q73-X4978			

399

Surge Arresters

Contents	Type	Page
Standard button 5 kA/5 A	A1-, A2-, B1-, B2-	402
Mini-button Ø 5 × 5 2,5 kA/2,5 A	M50-, M51-	403
Metal-ceramic Ø 8 × 6 20 kA/20 A	A80-, A81-	403
Metal-ceramic Ø 8 × 8 10 kA/10 A	A70-, A71-	404
Metal-ceramic Ø 8 × 20 20 kA/20 A	A83-	404
3-electrode surge arrester 20 kA/10 A	T20-, T21-, T23-	405
Es sich 35/36 20 kA/20 A	Es sich 35/36	406
HOLDERS	A1-A1 ... 30	407
	A4-A1	407
	M50-A1	407
	T80-A1	407
	A2-A1	408
	A3-A1	408
	Es sich 10 c	408
	Es sich 30 h	408

▼ Newly included in this edition

Metal-ceramic Ø 8 × 20 20 kA/20 A	A83-A230X A83-A350X	404 404
--------------------------------------	------------------------	------------

Further technical literature

Short Form Catalog "Gas-Filled Surge Arresters", B6-P4801-X-X-7400

Symbols and terms

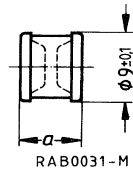
V_{sdclN} Nominal dc spark-over voltage

Surge Arresters

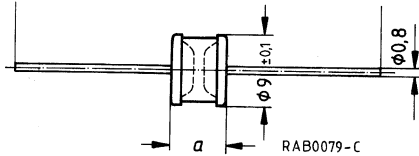
**Surge arresters
for overvoltage protection in telecommunications
systems and in measuring and control equipment**

**Standard button
5 kA/5 A**

A1-, A2-



B1-, B2-



Glass insulator

Type	V_{sdcN}	Dim. a_{max} mm	Ordering code	Min. qty.	Price each				
	V				Min. qty. +	100 +	500 +	1000 +	
A1-C90/20 ¹⁾	90	7,3	Q69-X101	25					
B1-C90/20	90	7,3	Q69-X184	25					
A1-C150 ¹⁾	150	7,3	Q69-X106	25					
B1-C150	150	7,3	Q69-X198	25					
A1-A230 ¹⁾	230	6,25	Q69-X102	25					
B1-A230	230	6,25	Q69-X185	25					
A1-A350 ¹⁾	350	6,3	Q69-X103	25					
B1-A350	350	6,3	Q69-X186	25					
B2-B470	470	7,8	Q69-X251	25					
A2-B600 ¹⁾	600	6,8	Q69-X111	25					
B2-B600	600	6,8	Q69-X154	25					
B2-B800	800	8,3	Q69-X252	25					
B2-H10	1000	7,35	Q69-X356	15					

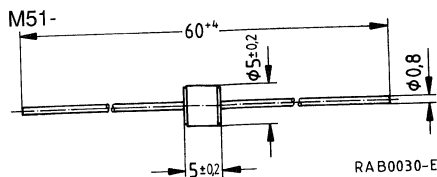
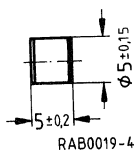
¹⁾ Matching holders (page 407): A1-A1, A1-A10, A1-A20, A1-A30

Surge arresters with other dc spark-over voltage ratings upon request.

Surge Arresters

Mini-button $\varnothing 5 \times 5$ 2,5 kA/2,5 A

M50-



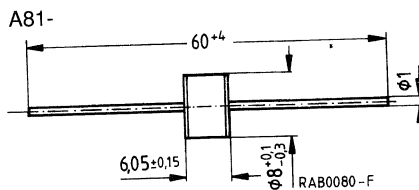
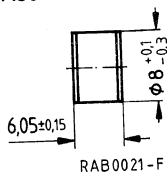
Ceramic insulator

Type	V_{sdch}	Ordering code	Min. qty.	Price each			
	V			Min. qty. +	100 +	500 +	1000 +
M50-A230X ¹⁾	230	Q69-X460	25				
M51-A230X	230	Q69-X293	25				
M50-A350X ¹⁾	350	Q69-X463	25				
M51-A350X	350	Q69-X464	25				

¹⁾ Version suitable for protection plug (5-point protection) C39104-A49-A20 for installation in slide 71.
Matching holder (page 407): M50-A1

Metal-ceramic $\varnothing 8 \times 6$ 20 kA/20 A

A80-



Dimensions in mm

Type	V_{sdch}	Ordering code	Min. qty.	Price each			
	V			Min. qty. +	100 +	500 +	1000 +
A80-C90X ¹⁾	90	Q69-X141	25				
A81-C90X	90	Q69-X138	25				
A80-A230X ¹⁾²⁾	230	Q69-X224	25				
A81-A230X	230	Q69-X225	25				
A80-A350X ¹⁾	350	Q69-X223	25				
A81-A350X	350	Q69-X238	25				

¹⁾ Version suitable for the protection plug of slide 100 installed in the mini-distributor, for slide-in unit 76 of slide 71 in the main distributor 71, and for jumper strip C39104-A77-A1 (IDC principle).
Matching holder (page 407): A4-A1

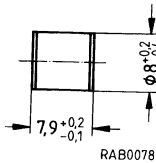
²⁾ Corresponds to version H of the German Federal Postal Administration (DBP)

Surge arresters with other dc spark-over voltage ratings upon request.

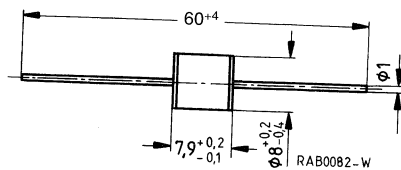
Surge Arresters

Metal-ceramic $\varnothing 8 \times 8$ 10 kA/10 A

A70-



A71-

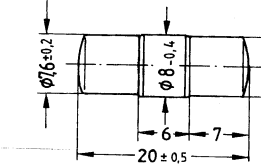


Type	V_{sdclN} V	Ordering code	Min. qty.	Price each			
				Min. qty. +	100 +	500 +	1000 +
A70-C90 ¹⁾	90	Q69-X247	15				
A71-C90	90	Q69-X248	15				
A71-A150	150	Q69-X241	15				
A70-A230 ¹⁾	230	Q69-X244	15				
A71-A230	230	Q69-X243	15				
A71-A350	350	Q69-X250	15				

1) For matching holders refer to Short Form Catalog "Gas-Filled Surge Arresters"

Metal-ceramic $\varnothing 8 \times 20$ 20 kA/20 A

A83-



RAB0006-7 Dimensions in mm

Type	V_{sdclN} V	Ordering code	Min. qty.	Price each			
				Min. qty. +	50 +	100 +	500 +
A83-C90 ¹⁾	90	Q69-X144	15				
▼ A83-A230X ¹⁾²⁾	230	Q69-X142	15				
▼ A83-A350X ¹⁾	350	Q69-X286	15				

Matching holder (page 408): A3-A1

¹⁾ Corresponds to version F of the German Federal Postal Administration (DBP)

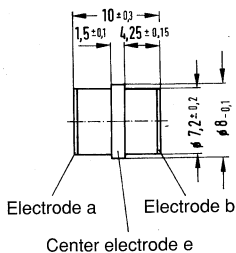
²⁾ With DBP qualification (FTZ 477 71 TL1, TL No. 5920-3004, edition 12.1988)

Surge arresters with other dc spark-over voltage ratings upon request.

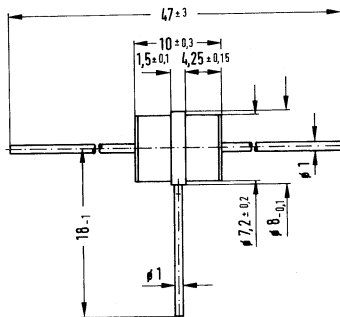
Surge Arresters

3-electrode surge arresters 20 kA/10 A

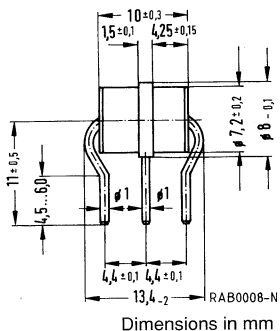
T20-A230



T21-



T23-



Ceramic insulator

Type	V _{sdcN}	Ordering code	Min. qty.	Price each			
	V			Min. qty. +	50 +	100 +	500 +
T20-A230 ¹⁾²⁾	230	Q69-X840	10				
T21-A230	230	Q69-X841	10				
T23-A230 ³⁾	230	Q69-X864	10				
T21-A350	350	Q69-X730	10				
T23-A350 ³⁾	350	Q69-X729	10				

¹⁾ Version suitable for jumper strip C39104-A77-A2 (IDC principle)

²⁾ Matching holder (page 407): T80-A1

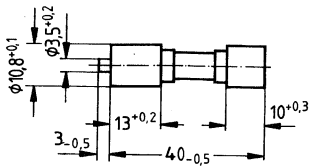
³⁾ Version suitable for jumper strip C39104-A49-A17 (mini-distributor)

Surge arresters with other dc spark-over voltage ratings upon request.

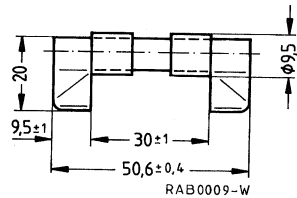
Surge Arresters

Es sich 35/36 20 kA/20 A

Es sich 35



Es sich 36



Dimensions in mm

Ceramic insulator

Type	V_{sdcN}	Ordering code	Min. qty. -	Price each				
	V			Min. qty. +	10 +	50 +	100 +	500 +
■ Es sich 35d ¹⁾	230	Q69-X1	5					
■ Es sich 36d ²⁾	230	Q69-X51	5					
■ Es sich 35a ¹⁾	350	Q69-X2	5					
■ Es sich 36a ²⁾	350	Q69-X52	5					
■ Es sich 35b ¹⁾	600	Q69-X3	5					
■ Es sich 36b ²⁾ ³⁾	600	Q69-X53	5					

¹⁾ Matching holders (page 408): A2-A1

²⁾ Matching holders (page 408): Es sich 10c, Es sich 30h

³⁾ Important:

Do not use for new equipment or spare part replacement in overvoltage protection units of type K1-D1, ordering code Q69-X2001
type K1-E1, ordering code Q69-X2011.

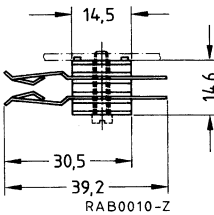
For these types a special version is available upon request.

Surge arresters with other dc spark-over voltage ratings upon request.

Surge Arresters

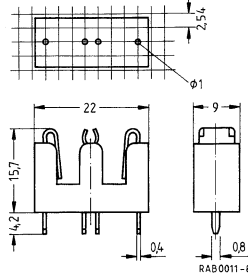
Holder

A1-A1



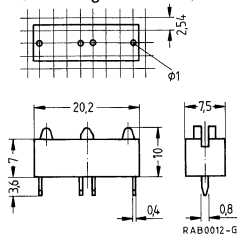
A4-A1

Hole arrangement on 2,54 mm grid



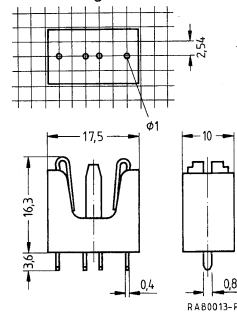
M50-A1

Hole arrangement on 2,54 mm grid



T80-A1

Hole arrangement on 2,54 mm grid



Dimensions in mm

Type	For arrester		Ordering code	Min. qty.	Price each				
	Dimensions	Max. number			Min. qty. +	10 +	50 +	100 +	500 +
A1-A1	Ø 9 × 6,25	1	Q81-X151	25					
A1-A10	...	10	Q81-X152	3					
A1-A20	Ø 9 × 7,3	20	Q81-X154	2					
A1-A30		30	Q81-X155	1					
A4-A1	Ø 8 × 6	2	Q69-X3439	25					
M50-A1	Ø 5 × 5	2	Q69-X3357	25					
T80-A1	Ø 8 × 10 ¹⁾	1	Q69-X3356	25					

The holders are supplied unequipped.

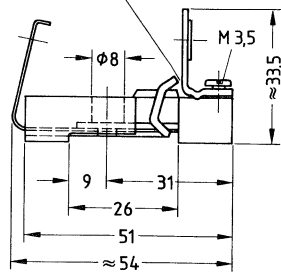
¹⁾ 3-electrode surge arrester

Surge Arresters

Holders

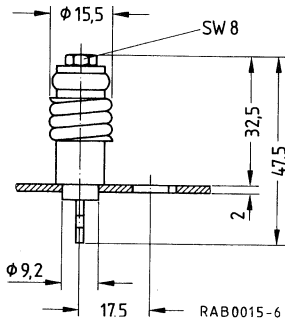
A2-A1

Spark gap

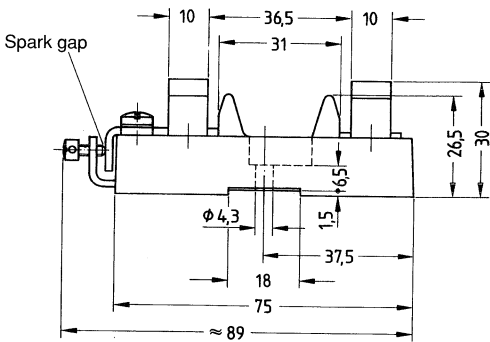


18 mm in width

A3-A1



Es sich 30h



20 mm in width

Dimensions in mm

Type	Max. number of arresters	Ordering code	Min. qty.	Price each				
				Min. qty. +	10 +	50 +	100 +	500 +
A2-A1	1	Q81-X161	5					
A3-A1	1	Q81-X156	10					
Es sich 10c	1	Q81-X171	5					
Es sich 30h	1	Q81-X175	5					

The holders are supplied unequipped.

Relays and Small Equipment

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Acoustic signaling devices	505
Universal spring couplings	511

Relays

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▼ Newly included in this edition	Type	Page
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Time delay relays CNS	POT:CNS	497
Time delay relays CNT	POT:CNT	499

Relays will be supplied in integral packing units (PU). Orders for other quantities will be rounded to complete packing units.

Further technical information

Data Book "Relays", A23999-A311-A959-*-7604
 "Relays for Automotive Applications", A23999-A311-A841-*-7604
 Technical Databook Potter & Brumfield, G13-C218

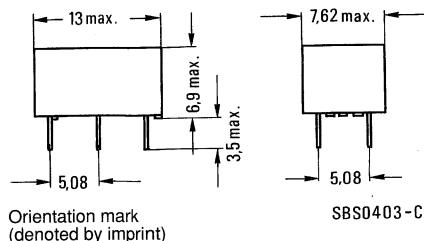
Miniature Relays P1

V23026- +***

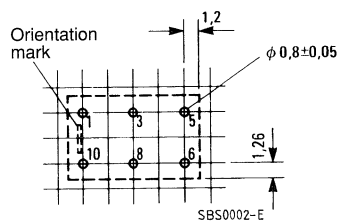
For dc operation, polarized, mono- and bistable
 Immersion cleanable
 Printed circuit terminals
 Pin arrangement for 2,54 mm grid in acc.
 with DIN 40801 and DIN 40803, fine
 Approvals: UL, CSA
 Approx. weight: 1,8 g

Contact ratings:

Max. switching voltage	150 Vdc/125 Vac
Max. switching current	1 A
Max. continuous current	1 A
Max. power rating	30 W/60 VA
Contact material	palladium nickel, gold-plated, rhodium coated

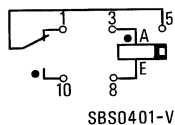


Dimensions in mm



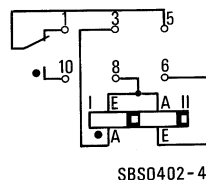
Base terminals

V23026-A ... monostable and V23026-C ... bistable (1 winding)



Circuit symbols drawn in OFF position.
 If plus potential is applied to terminal 3, the relay assumes the ON position.

V23026-B ... bistable (2 windings)



Circuit symbols drawn in OFF position.
 If plus potential is applied to terminal 3 or minus potential to terminal 6 as against terminal 8, the relay assumes the ON position.

Miniature Relays P1

Rated volt- age	Voltage range at 20°C	Coil resis- tance at 20°C ± 10 % Ω	Ordering code	PU	Price each					
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +	
Vdc	Vdc									
1 winding, monostable										
5	3,75 ... 14,5	370	V23026-A1001-B201	40						
12	9 ... 35	2250	V23026-A1002-B201	40						
15	11,25 ... 42	3100	V23026-A1003-B201	40						
24	17,5 ... 50	4500	V23026-A1004-B201	40						
2 windings (I and II, with identical technical data), bistable										
5	3,75 ... 14,75	390	V23026-B1101-B201	40						
12	9 ... 29	1500	V23026-B1102-B201	40						
1 winding, bistable										
5	3,75 ... 20	740	V23026-C1051-B201	40						
12	9 ... 50	4500	V23026-C1052-B201	40						
15	11,25 ... 50	4500	V23026-C1053-B201	40						

PU: Packing unit, see also page 412

V23026- +***

For dc operation, polarized,
mono- and bistable
Suitable for ultrasonic cleaning
Suitable for automatic placement
(e.g. on Siemens HS-180)
Supply in bar magazines

Approx. weight: 1,8 g

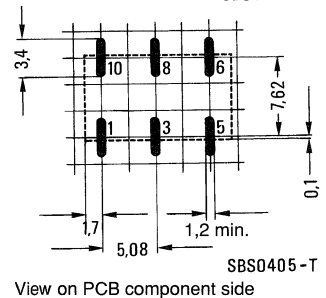
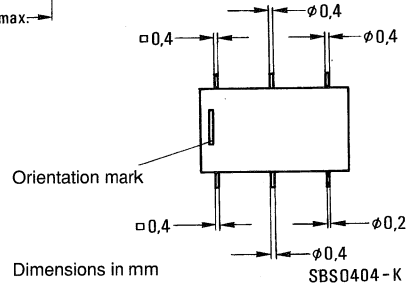
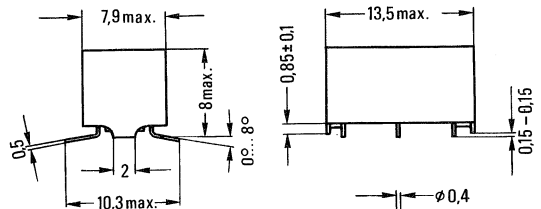
Permissible soldering methods

Max. soldering temperature and soldering time

- Vapor phase soldering: 215 °C; 40 s
- Infrared soldering: 215 °C; 40 s
- Dual wave soldering: 260 °C; 10 s

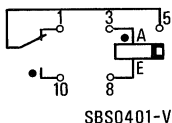
Contact ratings:

Max. switching voltage 150 Vdc/125 Vac
Max. switching current 1 A
Max. continuous current 1 A
Max. power rating 30 W/ 60 VA
Contact material palladium nickel, gold-plated, rhodium coated



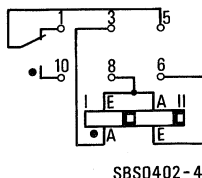
Base terminals

V23026-D1 ... monostable and V23026-F1 ... bistable (1 winding)



Circuit symbols drawn in OFF position.
If plus potential is applied to terminal 3, the relay assumes the ON position.

V23026-E1 ... bistable (2 windings)



Circuit symbols drawn in OFF position.
If plus potential is applied to terminal 3 or minus potential to terminal 6 as against terminal 8, the relay assumes the ON position.

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +

1 winding, monostable

▼ 5	3,75 ... 14,5	370	V23026-D1001-B201	40					
▼ 12	9 ... 35	2250	V23026-D1002-B201	40					
▼ 15	11,25 ... 42	3100	V23026-D1003-B201	40					
▼ 24	17,5 ... 50	4500	V23026-D1004-B201	40					

2 windings (I and II, with identical technical data), bistable

▼ 5	3,75 ... 14,75	390	V23026-E1101-B201	40					
▼ 12	9 ... 29	1500	V23026-E1102-B201	40					

1 winding, bistable

▼ 5	3,75 ... 20	740	V23026-F1051-B201	40					
▼ 12	9 ... 50	4500	V23026-F1052-B201	40					
▼ 15	11,25 ... 50	4500	V23026-F1053-B201	40					

PU: Packing unit, see also page 412

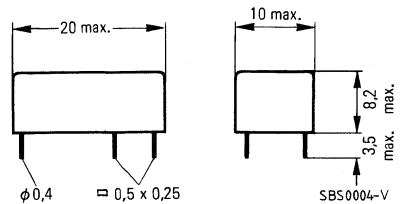
Miniature Relays D1

V23040- ★★★★★

For dc operation, polarized, mono- and bistable
Immersion cleanable
Printed circuit terminals
Pin arrangement for 2,5 mm and 2,54 mm grid in
acc. with DIN 40801 and DIN 40803, average

Approvals: UL, CSA

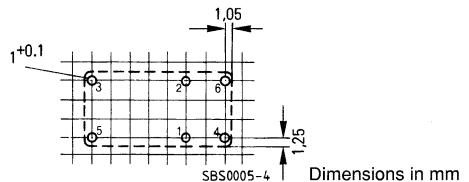
Approx. weight: 6 g



Contact ratings:

Max. switching voltage 150 Vdc/125 Vac
Max. switching current 2 A
Max. continuous current 2 A
Max. power rating 35 ... 60 W
(voltage-dependent)
60 VA

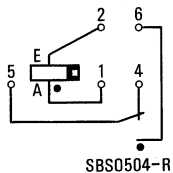
Contact material palladium nickel, gold-plated, rhodium coated



Mounting hole layout
View from the wiring side

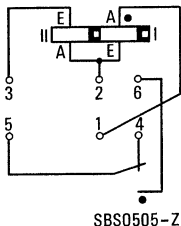
Base terminals

V23040-A ... monostable and V23040-C ... bistable



Circuit symbols drawn in OFF position.
If plus potential is applied to the start of the winding,
the relay assumes the ON position.

V23040-B ... bistable



Circuit symbols drawn in OFF position.
If minus potential is applied to terminal 1 or plus
potential to terminal 3 as against terminal 2, the relay
assumes the OFF position.
If plus potential is applied to terminal 1 or minus
potential to terminal 3 as against terminal 2, the relay
assumes the ON position.

Miniature Relays D1

Rated volt- age	Voltage range at 20 °C	Coil resis- tance at 20 °C ± 15 % Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
1 winding, monostable									
5	3,75 ... 16,5	320 ²⁾	V23040-A1-B201	25					
12	9 ... 30	1140	V23040-A2-B201	25					
15	11,25 ... 38	1850	V23040-A3-B201	25					
24	18 ... 60	4370	V23040-A4-B201	25					
2 windings (I and II, with identical technical data), bistable									
5	3,75 ... 16	315	V23040-B101-B201	25					
12	9 ... 30	1110	V23040-B102-B201	25					
15	11,25 ... 37	1760	V23040-B103-B201	25					
24 ¹⁾	18 ... 46	2800	V23040-B104-B201	25					
1 winding, bistable									
5	3,75 ... 20	500	V23040-C51-B201	25					
12	9 ... 38	1850	V23040-C52-B201	25					

¹⁾ Continuous energizing at rated voltage only permissible up to an ambient temperature of 60 °C.

²⁾ ± 10 %

PU: Packing unit, see also page 412

Miniature Relays D2

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +

Standard version

1 winding, monostable

5	3,75 ... 9	95	V23042-A2001-B101	25					
5	3,75 ... 9	95	V23042-A2001-B201	25					
12	9 ... 22	600	V23042-A2003-B101	25					
12	9 ... 22	600	V23042-A2003-B201	25					
24	18 ... 43	2210 ¹⁾	V23042-A2005-B101	25					
24	18 ... 43	2210 ¹⁾	V23042-A2005-B201	25					

Standard version

2 windings (I and II, with identical technical data), bistable

5	3,75 ... 10	125	V23042-B2201-B101	25					
12	9 ... 24	720 ¹⁾	V23042-B2203-B101	25					
24	18 ... 40	2040 ¹⁾	V23042-B2205-B101	25					

Standard version

1 winding, bistable

5	3,75 ... 14	250	V23042-C2101-B101	25					
12	9 ... 33	1440 ¹⁾	V23042-C2103-B101	25					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

Miniature Relays D4

V23104-A★★★

For dc operation,
neutral, monostable
Immersion cleanable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, average

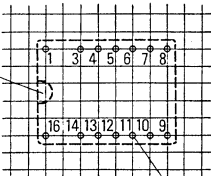
Approx. weight: 7 g

Contact ratings:

Max. switching voltage 150 Vdc/
150 Vac
Max. switching current 1,25 A
Max. power rating 30 W/50 VA

Contact material silver/nickel20
gold-plated

Orientation
mark

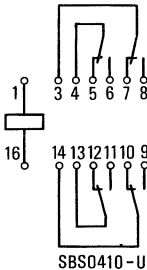


∅ 0,8+0,1 SBS038-E

Mounting hole layout
View from the wiring side

Dimensions in mm

Base terminals



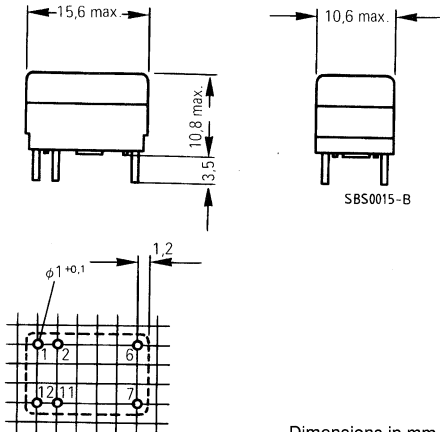
Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 % Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
5	3,6 ... 8,65	83	V23104-A1001-B101	25					
12	8,6 ... 20,8	480	V23104-A1003-B101	25					
24	17,1 ... 41,6	1920	V23104-A1005-B101	25					
48	34,1 ... 83,2	7680	V23104-A1007-B101	25					

PU: Packing unit, see also page 412

Miniature Relays W11

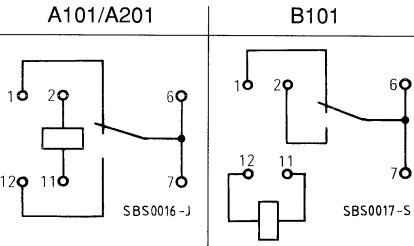
V23101-A***

For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, average
Approx. weight: 4 g



Dimensions in mm

Base terminals
ordering code, block 3



Mounting hole layout
View from the wiring side

Contact ratings:

Max. switching voltage 60 Vdc / 125 Vac
Max. switching current 1 A
Max. power rating 30 W/60 VA

Contact material A101/B101: silver,
gold-plated
A201: silver
palladium,
gold-plated

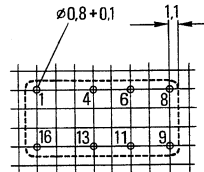
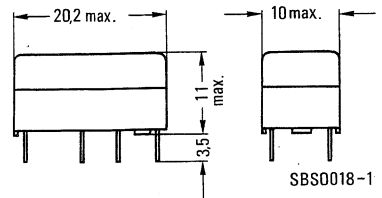
Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Vdc	Vdc	Ω							
5	4 ... 8	56	V23101-A3-A101	25					
12	9,6 ... 19,5	320	V23101-A6-A101	25					
12	9,6 ... 19,5	320	V23101-A6-A201	25					
24	19 ... 39	1280	V23101-A7-A101	25					
5	4 ... 8	56	V23101-A3-B101	25					
12	9,6 ... 19,5	320	V23101-A6-B101	25					
24	19 ... 39	1280	V23101-A7-B101	25					
12	8,4 ... 29	700	V23101-A106-A101	25					
24	16,8 ... 58	2800	V23101-A107-B101	25					

PU: Packing unit, see also page 412

Miniature Relays W11

V23102-B★★

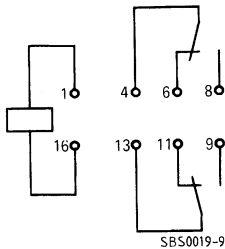
For dc operation, neutral, monostable
Immersion cleanable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, average
Approx. weight: 5 g



Dimensions in mm

Mounting hole layout
View from the wiring side

Base terminals



SBS0019-9

Contact ratings:

Max. switching voltage 125 Vdc/ac

Max. switching current 1,25 A

Max. power rating 30 W/60 VA

Contact material silver, gold-plated

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Vdc	Vdc								
Bifurcated contacts									
5	4 ... 7,5	50	V23102-B3-A111	25					
12	9,6 ... 18	290	V23102-B6-A111	25					
24	19,2 ... 36	1150	V23102-B7-A111	25					

PU: Packing unit, see also page 412

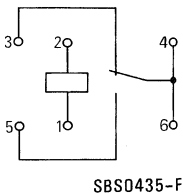
Miniature Relays W12

V23100-W12★★

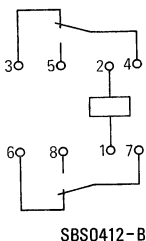
For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, average
(only version with 1 changeover contact)

Approx. weight: 8 g

Base terminals
1 changeover contact



2 changeover contacts



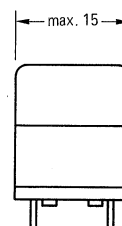
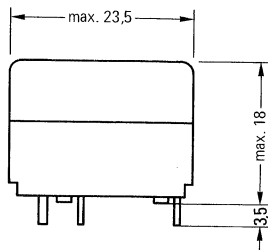
Contact ratings:

Max. switching voltage 125 Vdc /250 Vac

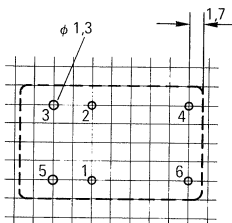
Max. switching current 3 A

Max. power rating 85 W/360 VA

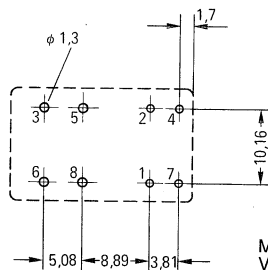
Contact material silver, gold-plated



SBS0413-J



Mounting hole layout
View from the wiring side



Mounting hole layout
View from the wiring side

Dimensions in mm

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
1 changeover contact									
5	4 ... 6,5	58	V23100-W1205-A103	20					
12	9,6 ... 19	300	V23100-W1212-A103	20					
24	19,2 ... 38	1250	V23100-W1224-A103	20					
2 changeover contacts									
5	4 ... 7,5	42	V23100-W1205-A104	20					
12	9,6 ... 18	230	V23100-W1212-A104	20					
24	19,2 ... 36	960	V23100-W1224-A104	20					

PU: Packing unit, see also page 412

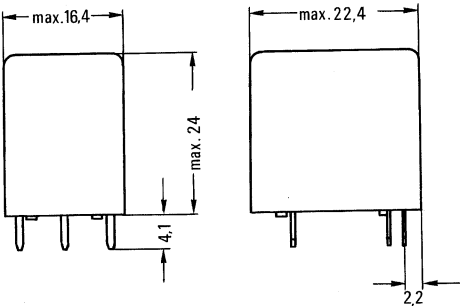
PC Board Relays T70

POT:T70

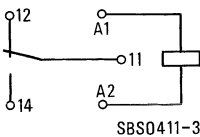
For dc operation, neutral, monostable
Immersion cleanable
Printed circuit terminals

Approvals: UL, CSA

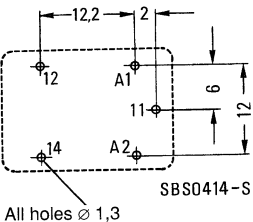
Approx. weight: 12 g



Base terminals



Dimensions in mm



Ordering code	POT:T70L5D131-	POT:T70L5D164-
Contact material	silver, gold-flashed	silver-cadmium oxide
Contact arrangement	1 changeover contact	1 changeover contact
Contact ratings:		
Max. switching voltage	100 Vdc/400 Vac	100 Vdc/400 Vac
Max. switching current	10 A (28 Vdc/240 Vac)	10 A (28 Vdc/240 Vac)
Max. continuous current	10 A	10 A

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU Price each					
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Vdc	Vdc								
6	4,5 ... 10	100	POT:T70L5D131-6	25					
12	9 ... 21	400	POT:T70L5D131-12	25					
24	18 ... 42	1600	POT:T70L5D131-24	25					
48	36 ... 48	6400	POT:T70L5D131-48	25					
▼ 6	4,5 ... 10	100	POT:T70L5D164-6	25					
▼ 12	9 ... 21	400	POT:T70L5D164-12	25					
▼ 24	18 ... 42	1600	POT:T70L5D164-24	25					
▼ 48	36 ... 48	6400	POT:T70L5D164-48	25					

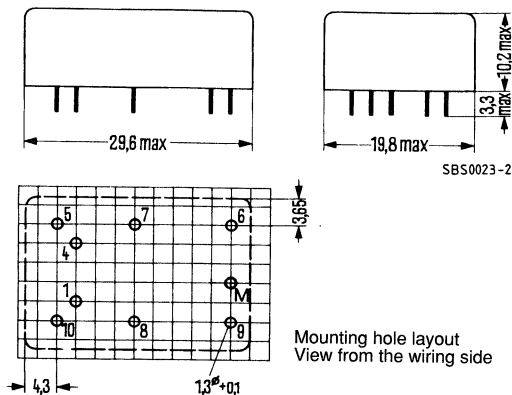
PU: Packing unit see also page 412

Card Relays N

V23012-A***

For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, average

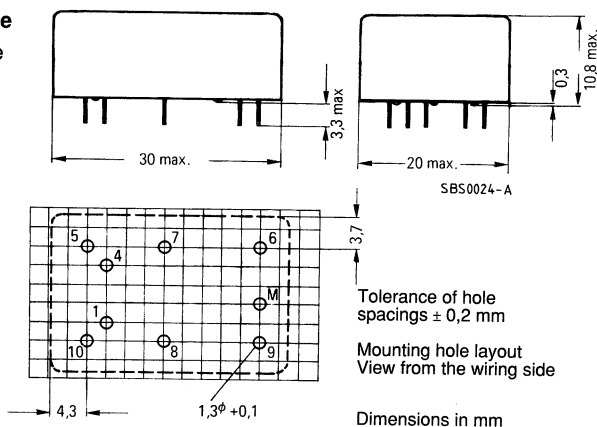
Approx. weight: 12 g



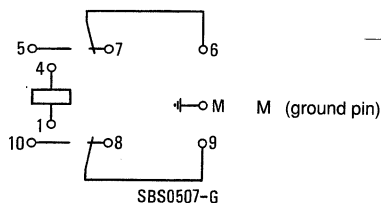
V23012-B*** immersion cleanable

for dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, fine

Approx. weight: 12 g



Base terminals



Ordering code, block 3	A001	B001	A004	B004
Contact material	silver, gold-flashed		gold F	
Contact ratings:				
Max. switching voltage	150 Vdc/125 Vac		36 Vdc/30 Vac	
Max. switching current	2 A		0,2 A	
Max. power rating	30 W		5 W	

Card Relays N

Rated volt- age	Voltage range at 20 °C	Coil resis- tance at 20 °C ± 15 % Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	
Single contacts									
6	4,2 ... 11	81 ²⁾	V23012-A101-A1	10					
12	8,3 ... 22	322 ²⁾	V23012-A102-A1	10					
24	16,8 ... 44	1045	V23012-A105-A1	10					
24	16,8 ... 44	1045	V23012-A105-A4	10					
48	33,5 ... 88	5350	V23012-A133-A1	10					
Bifurcated contacts									
6	4,2 ... 11	81 ²⁾	V23012-A101-B1	10					
12	8,3 ... 22	322 ²⁾	V23012-A102-B1	10					
12	8,3 ... 22	322 ²⁾	V23012-A102-B4	10					
24	16,8 ... 44	1045	V23012-A105-B1	10					
24	16,8 ... 44	1045	V23012-A105-B4	10					
48	33,5 ... 88	5350	V23012-A133-B1 ¹⁾	10					
48	33,5 ... 88	5350	V23012-A133-B4 ¹⁾	10					
60	42 ... 110	7750	V23012-A123-B1	10					
Single contacts, immersion cleanable									
12	8,3 ... 22	322 ²⁾	V23012-B102-A1	10					
24	16,8 ... 44	1045	V23012-B105-A1	10					
Bifurcated contacts, immersion cleanable									
12	8,3 ... 22	322 ²⁾	V23012-B102-B1	10					
12	8,3 ... 22	322 ²⁾	V23012-B102-B4	10					
24	16,8 ... 44	1045	V23012-B105-B1	10					
24	16,8 ... 44	1045	V23012-B105-B4	10					

¹⁾ Also for telephone equipment

²⁾ ± 10 %

PU: Packing unit, see also page 412

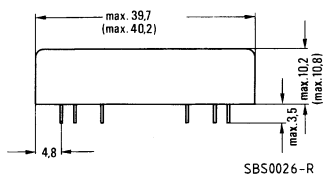
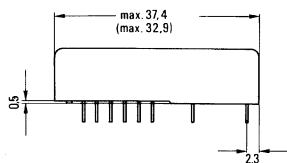
Card Relays SN Card Relays SP

- V23030 -A1***** without ground pin, neutral, monostable
-A2*** with ground pin, neutral, monostable
-H1*** without ground pin, neutral, monostable, immersion cleanable
-H2*** with ground pin, neutral, monostable, immersion cleanable
V23031 -A2*** with ground pin, polarized, bistable

With 4 changeover contacts, for dc operation
 Printed circuit terminals
 Pin arrangement for 2,5 mm and 2,54 mm grid
 in acc. with DIN 40801 and DIN 40803, fine

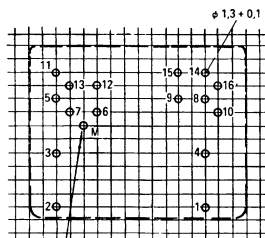
Approvals: UL

Approx. weight: 25 g



Dimensions in ()
for immersion
cleanable version

Dimensions in mm

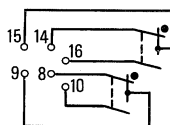
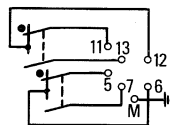


Hole for ground pin

Mounting hole layout
View from the wiring side

Base terminals

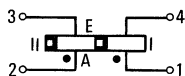
M = Ground pin



V23030



V23031



SBS0416-9

Circuit symbols drawn in OFF position.
 If plus potential is applied to the start of the
 winding, the relay assumes the OFF position.

Card Relays SN

Card Relays SP

Ordering code, block 3	A104	A204
Contact material	silver, gold-flashed	gold F
Contact ratings:		
Max. switching voltage	250 Vdc/ac	36 Vdc/30 Vac
Max. switching current	3 A ¹⁾	0,2 A
Max. power rating	40 ... 75 W (voltage-dependent) 100 VA	5 W 5 VA

¹⁾ The current of 3 A may flow for a maximum of 4 seconds up to 10 % on-time.

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	

Neutral, monostable, dust-protected

12	7,8 ... 24	185	V23030-A1017-A104	5					
24	15,5 ... 47	730	V23030-A1021-A104	5					
48	32 ... 88	2700 ¹⁾	V23030-A1026-A104	5					
60	38 ... 109	4100	V23030-A1014-A104	5					
6	3,9 ... 12,4	50	V23030-A2012-A104	5					
12	7,8 ... 24	185	V23030-A2017-A104	5					
12	7,8 ... 24	185	V23030-A2017-A204	5					
24	15,5 ... 47	730	V23030-A2021-A104	5					
48	32 ... 88	2700 ¹⁾	V23030-A2026-A104	5					
60	38 ... 109	4100 ¹⁾	V23030-A2014-A104	5					

Neutral, monostable, immersion cleanable

12	7,8 ... 24	185	V23030-H1017-A104	5					
24	15,5 ... 47	730	V23030-H1021-A104	5					
24	15,5 ... 47	730	V23030-H2021-A104	5					

Polarized, bistable with 2 windings (I and II, with identical technical data), dust-protected

24	17 ... 32	380	V23031-A2015-A104	5					
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¹⁾ ± 15 %

PU: Packing unit, see also page 412

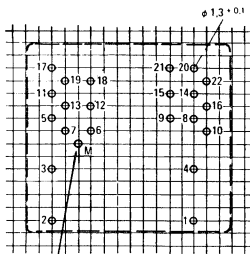
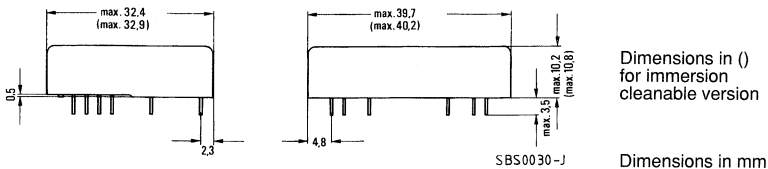
Card Relays SN Card Relays SP

- V23030 -C1***** without ground pin, neutral, monostable
-C2*** with ground pin, neutral, monostable
-J2*** with ground pin, neutral, monostable, immersion cleanable
V23031 -C2*** with ground pin, polarized, bistable

With 6 changeover contacts, for dc operation
 Printed circuit terminals
 Pin arrangement for 2,5 mm and 2,54 mm grid
 in acc. with DIN 40801 and DIN 40803, fine

Approvals: PTB, UL

Approx. weight: 30 g

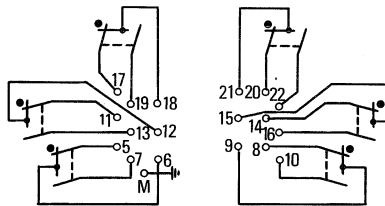


Hole for ground pin

Mounting hole layout
View from the wiring side

Base terminals

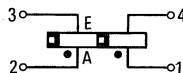
M = Ground pin



V23030



V23031



SBS0417-H

Circuit symbols drawn in OFF position.
 If plus potential is applied to the start of the
 winding, the relay assumes the OFF position.

Card Relays SN

Card Relays SP

Ordering code, block 3	A106	A206
Contact material	silver, gold-flashed	gold F
Contact ratings:		
Max. switching voltage	250 Vdc/ac	36 Vdc/30 Vac
Max. switching current	3 A ¹⁾	0,2 A
Max. power rating	40 ... 75 W (voltage-dependent) 100 VA	5 W 5 VA

¹⁾ The current of 3 A may flow for a maximum of 4 seconds up to 10 % on-time.

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	

Neutral, monostable, dust-protected

12	9,5 ... 24	185	V23030-C1017-A106	5					
24	18,5 ... 47	730	V23030-C1021-A106	5					
24	18,5 ... 47	730	V23030-C1021-A206	5					
48	37 ... 88	2700 ¹⁾	V23030-C1026-A106	5					
6	4,6 ... 12,4	50	V23030-C2012-A106	5					
12	9,5 ... 24	185	V23030-C2017-A106	5					
12	9,5 ... 24	185	V23030-C2017-A206	5					
24	18,5 ... 47	730	V23030-C2021-A106	5					
60	45 ... 109	4100 ¹⁾	V23030-C2014-A106	5					

Neutral, monostable, immersion cleanable

24	18,5 ... 47	730	V23030-J2021-A106	5					
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Polarized, bistable with 2 windings (I and II, with identical technical data), dust-protected

12	8,2 ... 16	93	V23031-C2012-A106	5					
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¹⁾ ± 15 %

PU: Packing unit, see also page 412

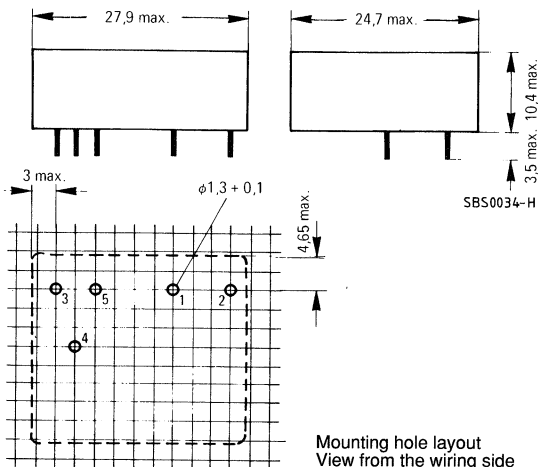
Card Relays E

V23127-A***

For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, average

Approvals: VDE, SEMKO, SEV, CSA,
UL¹⁾

Approx. weight: 12 g



V23057-A*** immersion cleanable

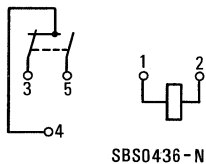
For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, fine

Approvals: VDE, SEMKO, SEV, CSA,
UL

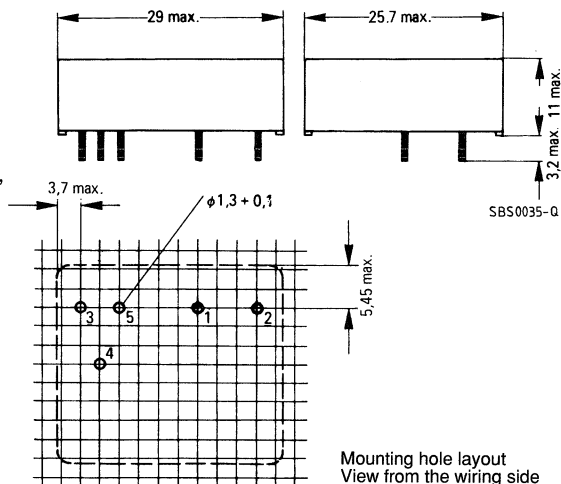
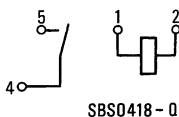
Approx. weight: 20 g

Base terminals

Changeover contact



Make contact



Dimensions in mm

¹⁾ Relays with approvals are available from the manufacturing plant, only upon request.

Card Relays E

Ordering code, block 3		A101	A201	A401	A102	A202	A402	B101	
Contact material		silver, gold-flashed	silver nickel	silver-cadmium oxide	silver, gold-flashed	silver nickel	silver cadmium oxide	silver, gold-flashed	
Contact arrangement		1 changeover contact			1 make contact			1 ch.over	
Max. switching voltage	V	300 dc/250 ac							
Max. switching current	A	5/15 ¹⁾	8/15 ¹⁾		5/15 ¹⁾	8/15 ¹⁾		4/10 ¹⁾	
Max. power rating DC voltage	W W W W	50 ... 330 (voltage-dependent)	up to 24 V: 100 30 V: 80 200 V: 30 250 V: 50	35 ... 330 (voltage-dependent)	50 ... 330 (voltage-dependent)	up to 24 V: 100 30 V: 80 200 V: 30 250 V: 50	35 ... 330 (voltage-dependent)	40 ... 220 (voltage-dependent)	
AC voltage	VA	1250	2000		1250	2000		500	
Max. contin. current	A	8							6

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +

Single contacts

6	4,2 ... 10,6	80	V23127-A1-A101	20					
6	4,2 ... 10,6	80	V23127-A1-A201	20					
12	8,3 ... 21,5	330	V23127-A2-A101	20					
12	8,3 ... 21,5	330	V23127-A2-A102	20					
12	8,3 ... 21,5	330	V23127-A2-A201	20					
12	8,3 ... 21,5	330	V23127-A2-A401	20					
24	16,8 ... 40	1200 ²⁾	V23127-A6-A101	20					
24	16,8 ... 40	1200 ²⁾	V23127-A6-A102	20					
24	16,8 ... 40	1200 ²⁾	V23127-A6-A201	20					
24	16,8 ... 40	1200 ²⁾	V23127-A6-A401	20					
48	32,8 ... 79	4700 ²⁾	V23127-A13-A101	20					
60	42 ... 98	7200 ²⁾	V23127-A23-A101	20					

Bifurcated contacts

12	8,3 ... 21,5	330	V23127-A2-B101	20					
24	16,8 ... 40	1200 ²⁾	V23127-A6-B101	20					

Single contacts, immersion cleanable

12	8,3 ... 21,5	330	V23057-A2-A101	20					
24	16,8 ... 40	1200 ²⁾	V23057-A6-A101	20					
24	16,8 ... 40	1200 ²⁾	V23057-A6-A401	20					

Bifurcated contacts, immersion cleanable

12	8,3 ... 21,5	330	V23057-A2-B101	20					
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¹⁾ The current of 10 or 15 A may flow for a maximum of 4 seconds up to 10 % on-time.

²⁾ ± 15 %

PU: Packing unit, see also page 412

Card Relays E

V23127-B***

(Contact-to-coil spacing ≥ 4 mm)

V23127-D***

(Contact-to-coil spacing ≥ 8 mm)

For dc operation, neutral, monostable

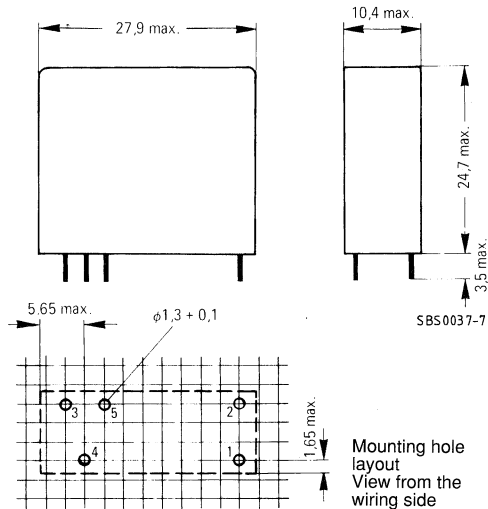
Printed circuit terminals

Pin arrangement for 2,5 mm and

2,54 mm grid in acc. with DIN 40801
and DIN 40803, average

Approvals: VDE, SEMKO, SEV, CSA,
UL¹⁾

Approx. weight: 12 g



V23057-B*** immersion cleanable

(Contact-to-coil spacing ≥ 4 mm)

For dc operation, neutral, monostable

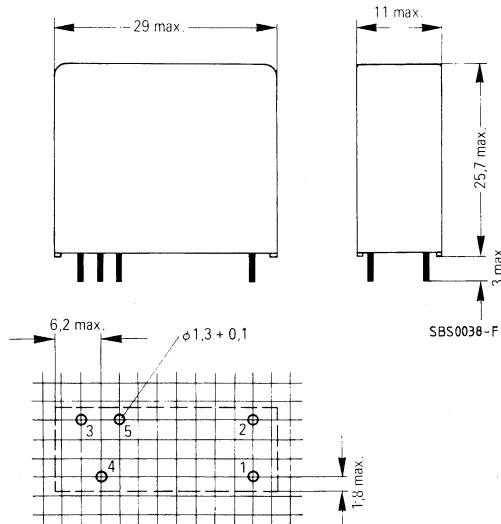
Printed circuit terminals

Pin arrangement for 2,5 mm and

2,54 mm grid in acc. with DIN 40801
and DIN 40803, fine

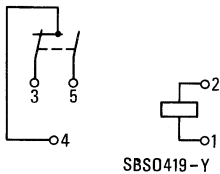
Approvals: VDE, SEMKO, SEV, CSA,
UL¹⁾

Approx. weight: 20 g



Base terminals
for V23127-B0 ...

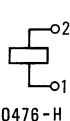
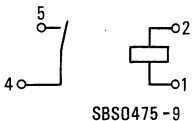
Changeover contact



Make contact

for V23127-D0 ...

Make contact



Mounting hole layout
View from the wiring side

Dimensions in mm

¹⁾ Relays with approvals are available from
the manufacturing plant, only upon request.

Card Relays E

Ordering code,block 3		A101	A201	A401	A102	A202	A402	B101	
Contact material		silver, gold-flashed	silver nickel	silver-cadmium oxide	silver, gold-flashed	silver nickel	silver-cadmium oxide	silver, gold-flashed	
Contact arrangement		1 changeover contact			1 make contact			1 ch.over	
Max. switching voltage	V	300 dc/250 ac							
Max. switching current	A	5/15 ¹⁾	8/15 ¹⁾		5/15 ¹⁾	8/15 ¹⁾		4/10 ¹⁾	
Max. power rating DC voltage	W	50 ... 330 (voltage-dependent)	up to 24 V: 100 30 V: 80 200 V: 30 250 V: 50	35 ... 330 (voltage-dependent)	50 ... 330 (voltage-dependent)	up to 24 V: 100 30 V: 80 200 V: 30 250 V: 50	35 ... 330 (voltage-dependent)	40 ... 220 (voltage-dependent)	
	W								
	W								
	W								
AC voltage	VA	1250	2000		1250	2000		500	
Max. cont. current	A	8							6

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 15 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +

Single contacts

6	4,2 ... 10,6	80 ²⁾	V23127-B1-A101	20					
12	8,3 ... 21,5	330 ²⁾	V23127-B2-A101	20					
12	8,3 ... 21,5	330 ²⁾	V23127-B2-A201	20					
12	8,3 ... 21,5	330 ²⁾	V23127-B2-A202	20					
12	8,3 ... 21,5	330 ²⁾	V23127-B2-A401	20					
24	16,8 ... 40	1200	V23127-B6-A101	20					
24	16,8 ... 40	1200	V23127-B6-A102	20					
24	16,8 ... 40	1200	V23127-B6-A201	20					
24	16,8 ... 40	1200	V23127-B6-A401	20					
48	32,8 ... 79	4700	V23127-B13-A101	20					
60	42 ... 98	7200	V23127-B23-A101	20					
24	16,8 ... 40	1200	V23127-D6-A402	20					

Bifurcated contacts

12	8,3 ... 21,5	330 ²⁾	V23127-B2-B101	20					
24	16,8 ... 40	1200	V23127-B6-B101	20					

Single contacts, immersion cleanable

12	8,3 ... 21,5	330 ²⁾	V23057-B2-A101	20					
12	8,3 ... 21,5	330 ²⁾	V23057-B2-A401	20					
12	8,3 ... 21,5	330 ²⁾	V23057-D2-A402	20					
24	16,8 ... 40	1200	V23057-B6-A101	20					
24	16,8 ... 40	1200	V23057-B6-A102	20					
24	16,8 ... 40	1200	V23057-B6-A401	20					

¹⁾ The current of 10 or 15 A may flow for a maximum of 4 seconds up to 10 % on-time.

²⁾ ± 10 %

PU: Packing unit, see also page 412

Miniature Power Relays MSR

V23061--+***

For dc operation, neutral, monostable

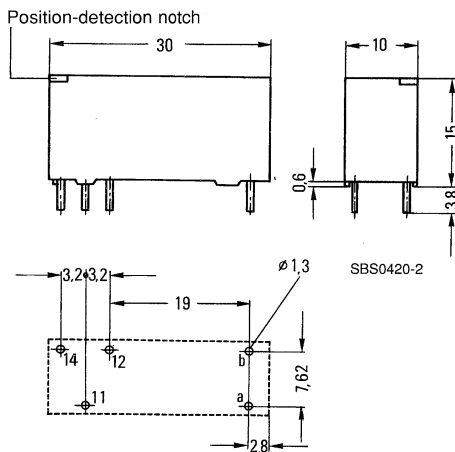
Immersion cleanable

Printed circuit terminals

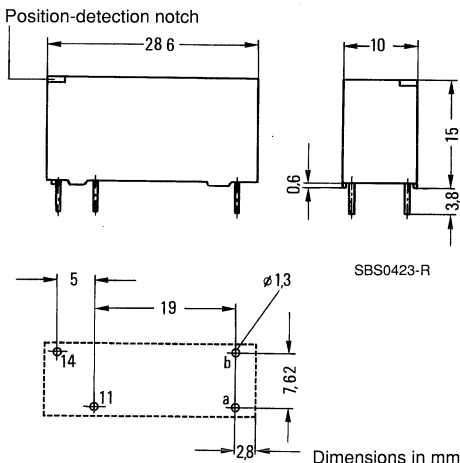
Approvals: VDE, UL, CSA, SEV¹⁾

Approx. weight: 10 g

With 1 changeover contact

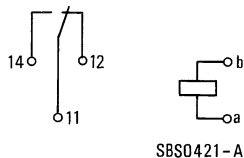


With 1 make contact

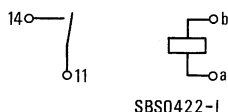


Base terminals

1 changeover contact



1 make contact



Ordering code, block 3	A401/A402
Contact material	silver-cadmium oxide
Contact arrangement	1 changeover/1 make
Contact ratings:	
Max. switching voltage	300 Vdc/250 Vac
Max. switching current	8 A
Max. continuous current	8 A
Max. power rating	50 ... 220 W (voltage-dependent) 2000 VA

¹⁾ Approvals for version with 1 changeover contact have already been granted; approvals for version with 1 make contact can be anticipated for mid 1991.

Miniature Power Relays MSR

Rated voltage	Voltage range at 20 °C	Coil resis- tance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
1 changeover contact									
6	4,3 ... 15	165	V23061-B1003-A401	20					
12	8,5 ... 30	650	V23061-B1005-A401	20					
24	17,2 ... 56	2270	V23061-B1007-A401	20					
48	34,5 ... 110	8790	V23061-B1009-A401	20					
1 make contact									
6	4,3 ... 15	165	V23061-A1003-A402	20					
12	8,5 ... 30	650	V23061-A1005-A402	20					
24	17,2 ... 56	2270	V23061-A1007-A402	20					
48	34,5 ... 110	8790	V23061-A1009-A402	20					

PU: Packing unit, see also page 412

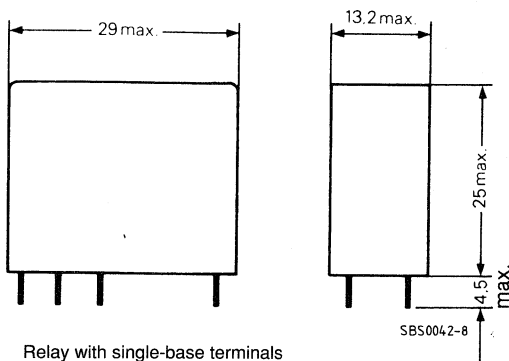
Miniature Power Relays E1

V23056-A***

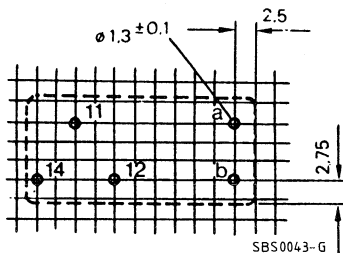
For dc operation, neutral, monostable
Printed circuit terminals,
single and twin-base
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, average
8 mm contact-to-coil spacing

Approvals: VDE, DEMKO, SEMKO,
SEV, CSA, UL¹⁾

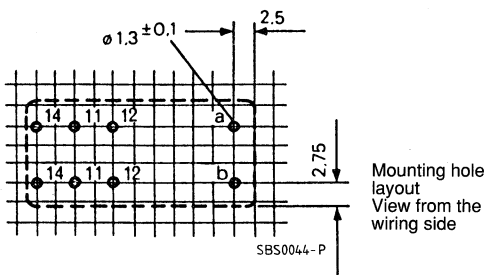
Approx. weight: 20 g



Relay with single-base terminals
for a continuous current of max. 10 A



Relay with twin-base terminals
for a continuous current of max. 16 A

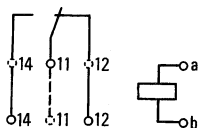


Mounting hole
layout
View from the
wiring side

Dimensions in mm

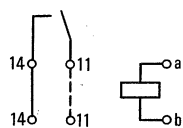
Base terminals for contact arrangement with:

1 changeover contact



SBS0424-Z

1 make contact



SBS0508-P

¹⁾ Relays with approvals are available from the manufacturing plant, only upon request.

Miniature Power Relays E1

Ordering code, block 3	A101, A104	A401, A404	A402
Contact material	silver	silver-cadmium oxide	
Contact arrangement	1 changeover contact	1 ch.over	1 make
Contact ratings: Max. switching voltage Max. switching current Max. continuous current Max. power rating	300 Vdc/250 Vac 16 A 10 A/16 A 50 ... 330 W (voltage-dependent) 2000 VA	300 Vdc/250 Vac 25 A ¹⁾ 10 A/16 A 35 ... 500 W (voltage-dependent) 4000 VA	

Rated volt- age	Voltage range at 20°C	Coil resis- tance at 20°C ± 10 % Ω	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Vdc	Vdc								
6	4,4 ... 9,5	60	V23056-A101-A101	20					
6	4,4 ... 9,5	60	V23056-A101-A401	20					
12	8,8 ... 18,5	215	V23056-A102-A101	20					
12	8,8 ... 18,5	215	V23056-A102-A104	20					
12	8,8 ... 18,5	215	V23056-A102-A401	20					
12	8,8 ... 18,5	215	V23056-A102-A402	20					
24	17,5 ... 36,5	875 ²⁾	V23056-A105-A101	20					
24	17,5 ... 36,5	875 ²⁾	V23056-A105-A401	20					
24	17,5 ... 36,5	875 ²⁾	V23056-A105-A402	20					
24	17,5 ... 36,5	875 ²⁾	V23056-A105-A404	20					

¹⁾ The current of 25 A may flow for a maximum of 4 seconds up to 10 % on-time.

²⁾ ± 15 %

PU: Packing unit, see also page 412

Miniature Relays RKP and RKS

Rated voltage	Voltage range at 20°C	Coil resistance at 20°C ± 10 % Ω	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Vdc	Vdc								
Immersion cleanable, mounting hole layout 1									
6	4,2 ... 9,3	69	V23150-E1-A404	25					
12	8,4 ... 18,5	275	V23150-E2-A404	25					
24	16,8 ... 31,7	1100	V23150-E5-A404	25					
Immersion cleanable, mounting hole layout 2									
6	4,2 ... 9,3	69	V23150-F1-A404	25					
12	8,4 ... 18,5	275	V23150-F2-A404	25					
24	16,8 ... 31,7	1100	V23150-F5-A404	25					
Immersion cleanable, mounting hole layout 3									
6	4,2 ... 9,3	69	V23150-F1-A401	25					
12	8,4 ... 18,5	275	V23150-F2-A401	25					
24	16,8 ... 31,7	1100	V23150-F5-A401	25					

PU: Packing unit, see also page 412

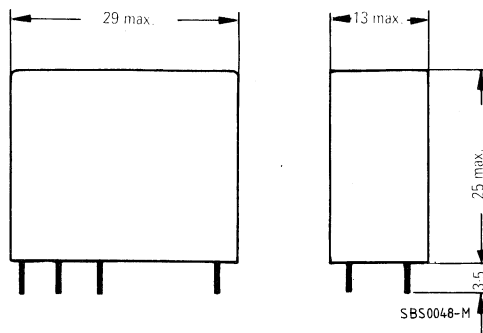
Miniature Power Relays E2

V23037-A*** (Standard version) V23037-B*** (Contact-to-coil spacing ≥ 6 mm)

For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm and
2,54 mm grid in acc. with DIN 40801
and DIN 40803, average

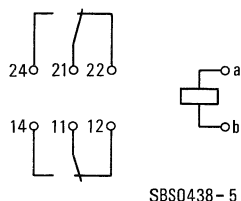
Approvals: VDE, SEMKO, SEV, CSA,
UL¹⁾

Approx. weight: 20 g

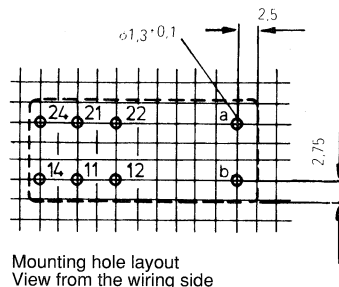
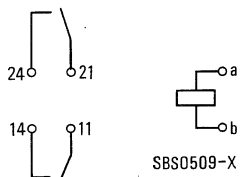


Base terminals

2 changeover contacts



2 make contacts



Dimensions in mm

Ordering code, block 3	A101	A102	A401	A402
Contact material	silver, gold-flashed		silver-cadmium oxide	
Contact arrangement	2 ch. overs	2 makes	2 ch.overs	2 makes
Contact ratings:	300 Vdc/250 Vac 10 A 5 A 1250 VA 50 ... 250 W (voltage-dependent) 35 ... 250 W (voltage-dependent)			
Max. switching voltage				
Max. switching current ²⁾				
Max. continuous current				
Max. power rating				

¹⁾ Relays with approvals available from the manufacturing plant, only upon request.

²⁾ The current of 10 A may flow for a maximum of 4 seconds up to 10 % on-time.

Miniature Power Relays E2

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
6	4,4... 10,4	70	V23037-A1-A101	20					
12	8,8... 20,8	270	V23037-A2-A101	20					
12	8,8... 20,8	270	V23037-A2-A102	20					
12	8,8... 20,8	270	V23037-A2-A401	20					
12	8,8... 20,8	270	V23037-B2-A102	20					
12	8,8... 20,8	270	V23037-B2-A402	20					
18	13,5... 32	645	V23037-B9-A402	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-A5-A101	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-A5-A102	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-A5-A401	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-A5-A402	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-B5-A102	20					
24	17,5... 41,5	1 100 ¹⁾	V23037-B5-A402	20					
48	35 ... 83	4 400 ¹⁾	V23037-A4-A101	20					
48	35 ... 83	4 400 ¹⁾	V23037-A4-A401	20					
60	44 ...101	6 850 ¹⁾	V23037-A3-A101	20					
60	44 ...101	6 850 ¹⁾	V23037-A3-A102	20					
60	44 ...101	6 850 ¹⁾	V23037-A3-A401	20					
85	62 ...140	13 000 ¹⁾	V23037-A13-A101	20					
110	80 ...170	18 000 ¹⁾	V23037-A22-A101	20					

Special versions (not for new design)

			V23037-A2-X24	20					
			V23037-A3-X35	20					
			V23037-A4-X29	20					
			V23037-A7-X22	20					
			V23037-A43-X21	20					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

Miniature Power Relays N

V23016-A***

For dc operation, neutral, mono-stable, terminals for 2,8 mm push-on connectors in acc. with DIN 46245 and DIN 46247

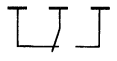
DEMKO, SEMKO, SEV, CSA, UL

Approx. weight: 15 g

Base terminals



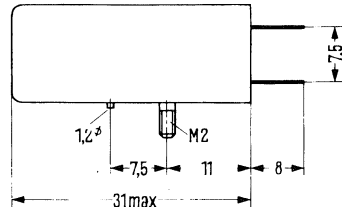
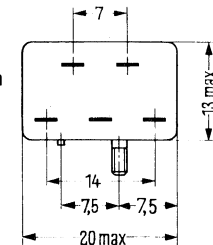
SBS0428-X



Changeover contact



SBS0439-D



SBS0051-7

Dimensions in mm

The relays V23016-A ... is fixed by means of a screw M2. This screw is available to order either 4 mm or 6 mm in length.

Ordering code, block 3	A101, A191	A201, A291	A401	A102, A192
Contact material	silver, gold-flashed	silver nickel	silver-cadmium oxide	silver, gold-plated
Contact arrangement	1 changeover contact			1 twin-make contact
Max. switching voltage	V	250V dc/ac		
Max. switch. current ¹⁾	A	15		
Max. power rating DC voltage	W	up to: 24 V: 150 30 V: 100 200 V: 30 250 V: 50	35 ... 400 (voltage-dependent)	55 ... 420 (voltage-dependent)
AC voltage	VA	3750		
Max. cont. current	A	7,5		

Rated voltage	Voltage range at 20°C	Coil resistance bei 20°C ± 15 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
6	4,2 ... 11	65 ²⁾	V23016-A2-A101	10					
12	8,3 ... 22	230 ²⁾	V23016-A5-A101	10					
24	16,8 ... 44	970	V23016-A6-A101	10					
48	33,5 ... 88	3150	V23016-A4-A101	10					
60	42 ... 110	5000	V23016-A13-A101	10					
24	16,8 ... 44	970	V23016-A6-A201	10					
24	16,8 ... 44	970	V23016-A6-A401	10					
Screw M2 × 4			D933-G40-S1	—					
screw M2 × 6			D933-G60-S1	—					

¹⁾ The current of 15 A may flow for a maximum of 4 seconds up to 10 % on-time.

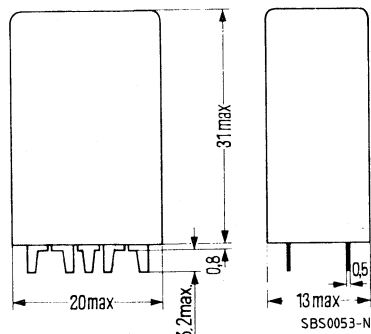
²⁾ ± 10 %

PU: Packing unit, see also page 412

Miniature Power Relays N

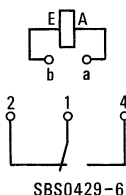
V23016-B★★★

For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm grid in acc.
with DIN 40801 and DIN 40803, fine
Approx. weight: 15 g



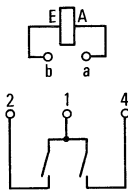
Base terminals

Changeover contact

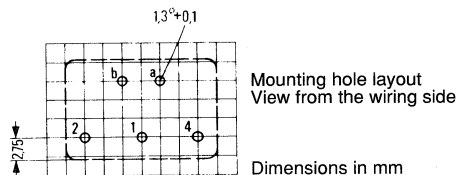


SBS0429-6

Twin-make contact



SBS0440-6



For contact ratings and contact material refer to page 444

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 15 %	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	
6	4,2 ... 11	65 ¹⁾	V23016-B2-A101	10					
12	8,3 ... 22	230 ¹⁾	V23016-B5-A101	10					
24	16,8 ... 44	970	V23016-B6-A101	10					
24	16,8 ... 44	970	V23016-B6-A102	10					
48	33,5 ... 88	3150	V23016-B4-A101	10					
60	42 ... 110	5000	V23016-B13-A101	10					
12	8,3 ... 22	230 ¹⁾	V23016-B5-A201	10					
24	16,8 ... 44	970	V23016-B6-A201	10					
24	16,8 ... 44	970	V23016-B6-A401	10					

1) ± 10 %

PU: Packing unit, see also page 412

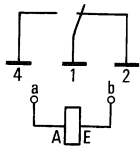
Miniature Power Relays N

V23016-C***

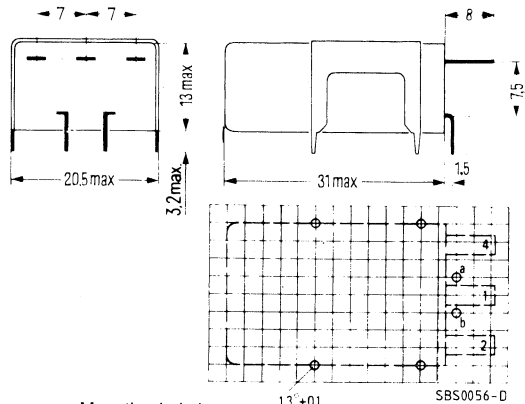
For dc operation, neutral, monostable
Coil terminals for printed circuits in acc.
with DIN 40801 and DIN 40803, fine
Contact terminals for 2,8 mm push-on
connectors in acc. with DIN 46245 or
DIN 46247

Approx. weight: 16 g

Base terminals



SBS0430-9



Mounting hole layout
View from the wiring side

Dimensions in mm

For contact ratings and contact material refer to page 444

Rated volt- age	Voltage range at 20 °C	Coil resis- tance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
					Pcs/ea	PU +	100 +	500 +	1000 +
Vdc	Vdc								
6	4,2 ... 11	65	V23016-C2-A101	10					
12	8,3 ... 22	230	V23016-C5-A101	10					
24	16,8 ... 44	970 1)	V23016-C6-A101	10					
60	42,0 ... 110	5000 1)	V23016-C13-A101	10					
12	8,3 ... 22	230	V23016-C5-A201	10					
24	16,8 ... 44	970 1)	V23016-C6-A201	10					

¹⁾ ± 15 %

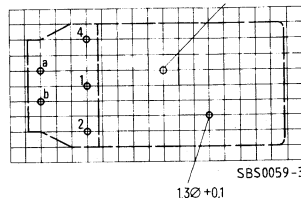
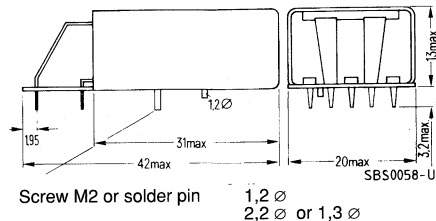
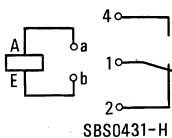
PU: Packing unit, see also page 412

Miniature Power Relays N

V23016-D★★★★-A★0★ with screw
V23016-D★★★★-A★9★ with solder pin
 for additional fixing

For dc operation, neutral, monostable
 Printed circuit terminals
 Pin arrangement for 2,5 mm grid in acc.
 with DIN 40801 and DIN 40803, fine
 Approx. weight: 18 g

Base terminals



Mounting hole
 layout
 View from the
 wiring side

Dimensions in mm

The relay V23016-D★★★★-A★0★ is fixed by means of a screw M2. These screws are available to order either 4 mm or 6 mm in length.

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	
Vdc	Vdc								
6	4,2 ... 11	65	V23016-D2-A101	10					
12	8,3 ... 22	230	V23016-D5-A101	10					
24	16,8 ... 44	970 ¹⁾	V23016-D6-A101	10					
48	33,5 ... 88	3150 ¹⁾	V23016-D4-A101	10					
12	8,3 ... 22	230	V23016-D5-A191	10					
24	16,8 ... 44	970 ¹⁾	V23016-D6-A191	10					
24	16,8 ... 44	970 ¹⁾	V23016-D6-A192	10					
12	8,3 ... 22	230	V23016-D5-A201	10					
24	16,8 ... 44	970 ¹⁾	V23016-D6-A201	10					
15	11 ... 28	395	V23016-D7-A291	10					
24	16,8 ... 44	970 ¹⁾	V23016-D6-A291	10					
Screw M2 × 4				D933-G40-S1	—				
Screw M2 × 6				D933-G60-S1	—				

¹⁾ ± 15 %

PU: Packing unit, see also page 412

Industrial Relays 1

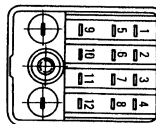
General-Purpose Relays KHA

V23100-V72★★ POT:KHAU

For dc or ac operation,
neutral, monostable
Solder or taper tab terminals

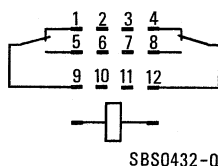
Approvals: UL, CSA

Approx. weight: 35 g

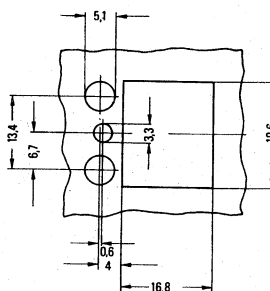
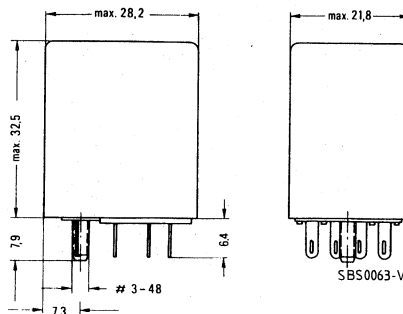
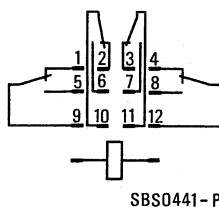


Base terminals

2 changeover contacts



4 changeover contacts



Dimensions in mm

Mounting hole layout

Ordering code	V23100-V72★★-F104 POT: KHAU-11+★★	V23100-V72★★-F110 POT: KHAU-17+★★
Contact material	silver	silver
Contact arrangement	2 changeover contacts	4 changeover contacts
Contact ratings:		
Max. switching voltage	110 Vdc/250 Vac	110 Vdc/250 Vac
Max. switching current	5 A (28 Vdc/120 Vac)	5 A (28 Vdc/120 Vac)
Max. continuous current	5 A	5 A

Industrial Relays 1

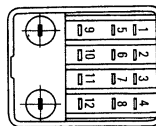
General-Purpose Relays KHA

V23100-V73★★ POT:KHA E

For dc or ac operation,
neutral, monostable
Printed circuit terminals

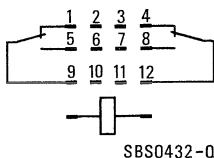
Approvals: UL, CSA

Approx. weight: 35 g

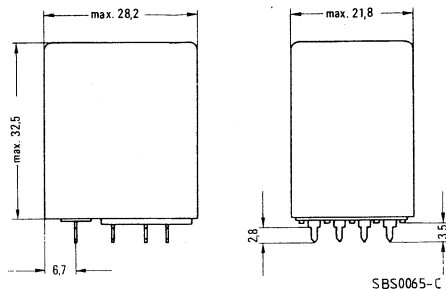
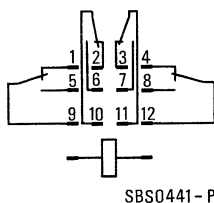


Base terminals

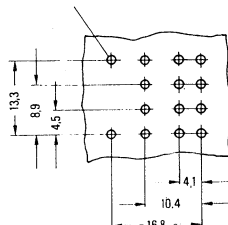
2 changeover contacts



4 changeover contacts



All holes $\varnothing$ 1,8 mm



Mounting hole layout
View from the wiring side

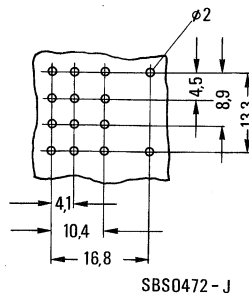
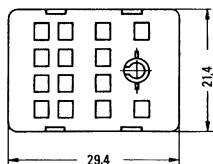
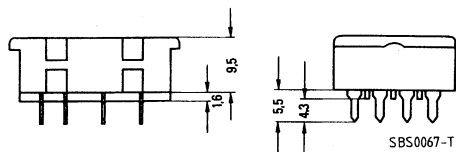
Dimensions in mm

Ordering code	V23100-V73★★-F104 POT: KHA E-11+★★	V23100-V73★★-F110 POT: KHA E-17+★★
Contact material	silver	silver
Contact arrangement	2 changeover contacts	4 changeover contacts
Contact ratings:		
Max. switching voltage	110 Vdc/250 Vac	110 Vdc/250 Vac
Max. switching current	5 A (28 Vdc/120 Vac)	5 A (28 Vdc/120 Vac)
Max. continuous current	5 A	5 A

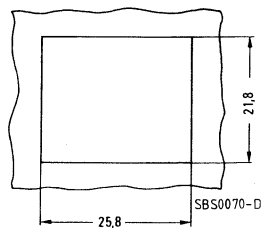
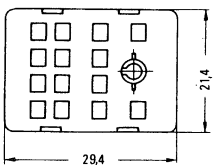
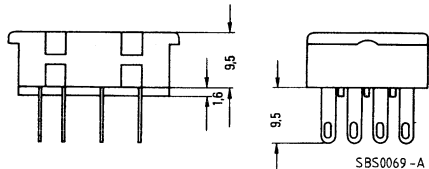
Industrial Relays 1

General-Purpose Relays KHA

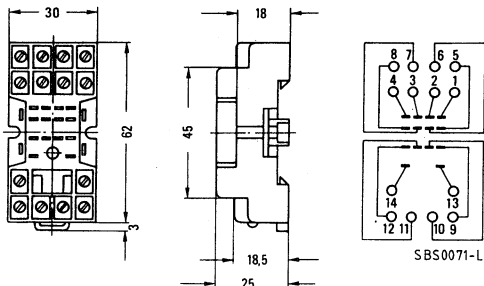
Socket with printed circuit terminals and hold-down spring V23100-Z1007, POT:27E007 + POT:20C217



Socket with pierced solder terminals and retainer/hold-down spring V23100-Z7002, POT:27E006 + POT:24A032 + POT:20C217



DIN rail, snap-mount socket with hold-down spring V23100-Z7019, POT:27E894 + POT:20C297



Dimensions in mm

Industrial Relays 1

General-Purpose Relays KHA

Rated voltage	Coil resistance at 20 °C ± 15 %	Ordering code	PU	Price each				
			Pcs/ea	PU	100 +	500 +	1000 +	
24 Vdc	650 ¹⁾	V23100-V7213-F104 POT: KHAU-11D11-24	10					
24 Vdc	650 ¹⁾	V23100-V7213-F110 POT: KHAU-17D11-24	10					
24 Vac	160	V23100-V7223-F110 POT: KHAU-17A11-24	10					
120 Vac	3900	V23100-V7227-F104 POT: KHAU-11A11-120	10					
120 Vac	3900	V23100-V7227-F110 POT: KHAU-17A11-120	10					
240 Vac	12000	V23100-V7228-F104 POT: KHAU-11A11-240	10					
240 Vac	12000	V23100-V7228-F110 POT: KHAU-17A11-240	10					
12 Vdc	160	V23100-V7312-F104 POT: KHAE-11D11-12	10					
24 Vdc	650	V23100-V7313-F104 POT: KHAE-11D11-24	10					
12 Vdc	160	V23100-V7312-F110 POT: KHAE-17D11-12	10					
24 Vdc	650	V23100-V7313-F110 POT: KHAE-17D11-24	10					
240 Vac	12000	V23100-V7328-F104 POT: KHAE-11A11-240	10					
240 Vac	12000	V23100-V7328-F110 POT: KHAE-17A11-240	10					
—	—	V23100-Z7001 POT: 27E007 + 20C217	10					
—	—	V23100-Z7002 POT: 27E006 + 24A032 + 20C217	10					
—	—	V23100-Z7019 POT: 27E894 + 20C297	10					

Please use code V23100- ... for your order. The designation POT:... is given to permit comparison with the data stated for the same product in the Potter & Brumfield Technical Databook.

¹⁾ ± 10 %

PU: Packing unit, see also page 412

Industrial Relays 10

General-Purpose Relays KRPA

V23100-V9★★★

POT:KRPA

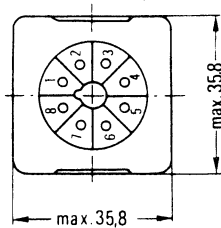
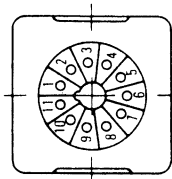
For dc or ac operation,

neutral, monostable

Plug termination, with actuator

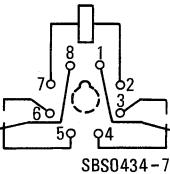
Approvals: UL, CSA pending

Approx. weight: 85 g

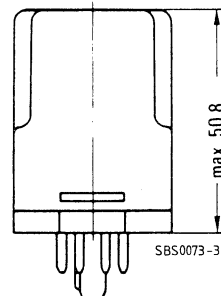
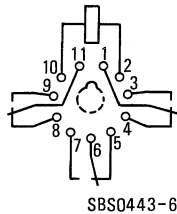


Base terminals

2 changeover contacts



3 changeover contacts



Dimensions in mm

Ordering code		V23100-V91★★-F204 POT: KRPA-11	V23100-V91★★-F206 POT: KRPA-14
Contact material		silver nickel	
Contact designation		21-21	21-21-21
Max. switching voltage	Vdc Vac	250 250	
Max. switching current	A	10	
Max. power rating			
DC voltage	W	up to 24 V: 240	
AC voltage	W VA	up to 250 V: 100 1500	
Max. continuous current	A	10	

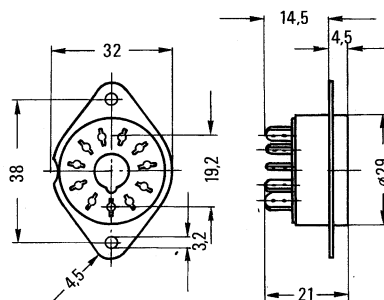
Industrial Relays 10

General-Purpose Relays KRPA

Socket with metal flange

8-pin or 11-pin

For solder connection



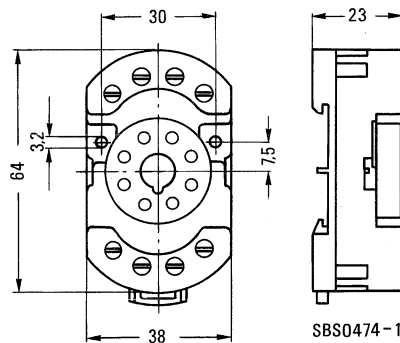
SBS0473-S

Socket with fixture

8-pin or 11-pin

For snap-on mounting
onto DIN 46277 rails

For screw connection



SBS0474-1

Dimensions in mm

		Ordering code	PU	Price each			
			Pcs/ea	PU +	100 +	500 +	1000 +
Socket with metal flange	8-pin	V23100-Z9001	10				
	11-pin	V23100-Z9002	10				
with fixture	8-pin	V23100-Z9005	10				
	11-pin	V23100-Z9006	10				
Retainer		V23100-Z9007	10				

PU: Packing unit, see also page 412

Industrial Relays 10

General-Purpose Relays KRPA

Rated voltage	Coil resistance at 20 °C ± 15 % Ω	Ordering code	PU	Price each				
			Pcs/ea	PU +	100 +	500 +	1000 +	
12 Vdc	120 ¹⁾	V23100-V9112-F204 POT: KRPA-11DMP-12	10					
12 Vdc	120 ¹⁾	V23100-V9112-F206 POT: KRPA-14DMP-12	10					
24 Vdc	472 ¹⁾	V23100-V9113-F204 POT: KRPA-11DMP-24	10					
24 Vdc	472 ¹⁾	V23100-V9113-F206 POT: KRPA-14DMP-24	10					
24 Vac	85	V23100-V9123-F204 POT: KRPA-11AMP-24	10					
24 Vac	85	V23100-V9123-F206 POT: KRPA-14AMP-24	10					
120 Vac	2250	V23100-V9127-F204 POT: KRPA-11DMP-120	10					
120 Vac	2250	V23100-V9127-F206 POT: KRPA-14DMP-120	10					
240 Vac	9110	V23100-V9128-F204 POT: KRPA-11AMP-240	10					
240 Vac	9110	V23100-V9128-F206 POT: KRPA-14AMP-240	10					

Please use code V23100- ... in your order. The designation POT: ... is given to permit comparison with the data stated for the same product in the Potter & Brumfield Technical Databook.

¹⁾ ± 10 %

PU: Packing unit, see also page 412

General-Purpose Relays KU

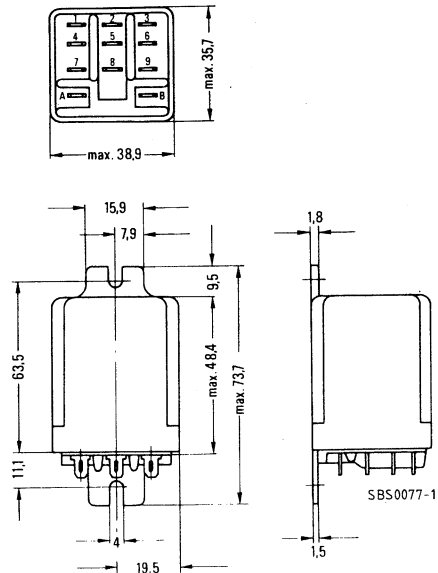
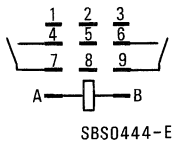
POT:KUGP

For dc or ac operation,
neutral, monostable
4,75 mm quick connect/solder terminals
8 mm contact-to-coil spacing
3 mm contact gap

Approvals: VDE, SEV, CSA, UL

Approx. weight: 90 g

Base terminals



Dimensions in mm

Contact material	silver-cadmium oxide
Contact arrangement	2 make contacts
Contact ratings:	
Max. switching voltage	120 Vdc/600 Vac
Max. switching current	16 A
Max. continuous current	10 A
Max. power rating	280 W/2400 VA

Rated voltage	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
			Pcs/ea	PU +	100 +	500 +	1000 +	
12 Vdc	120	POT:KUGP-7D55-12	10					
24 Vdc	472	POT:KUGP-7D55-24	10					
240 Vac	9110 ¹⁾	POT:KUGP-7A55-240	10					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

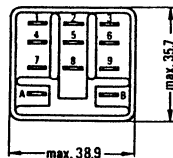
General-Purpose Relays KU

POT:KUIP

For dc or ac operation,
neutral, monostable
4,75 mm quick connect/solder terminals
8 mm contact-to-coil spacing

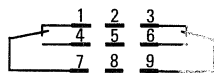
Approvals: VDE, SEV, CSA, UL

Approx. weight: 90 g



Base terminals

2 changeover contacts

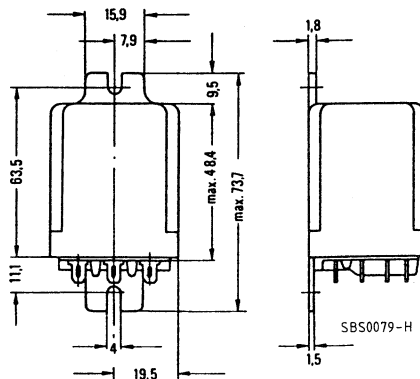


SBS0446-M

3 changeover contacts



SBS0446-V



SBS0079-H

Dimensions in mm

Ordering code	POT: KUIP-11+★★	POT: KUIP-14+★★
Contact material	silver-cadmium oxide	silver-cadmium oxide
Contact arrangement	2 changeover contacts	3 changeover contacts
Contact ratings:		
Max. switching voltage	120 Vdc/600 Vac	120 Vdc/600 Vac
Max. switching current	16 A	16 A
Max. continuous current	10 A	10 A
Max. power rating	280 W/2400 VA	280 W/1200 VA

Rated voltage	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU Pcs/ea	Price each			
				PU +	100 +	500 +	1000 +
12 Vdc	120	POT: KUIP-11D55-12	10				
12 Vdc	120	POT: KUIP-14D55-12	10				
24 Vdc	472	POT: KUIP-11D55-24	10				
24 Vdc	472	POT: KUIP-14D55-24	10				
240 Vac	9110 ¹⁾	POT: KUIP-11A55-240	10				
240 Vac	7200 ¹⁾	POT: KUIP-14A55-240	10				

¹⁾ ± 15 %

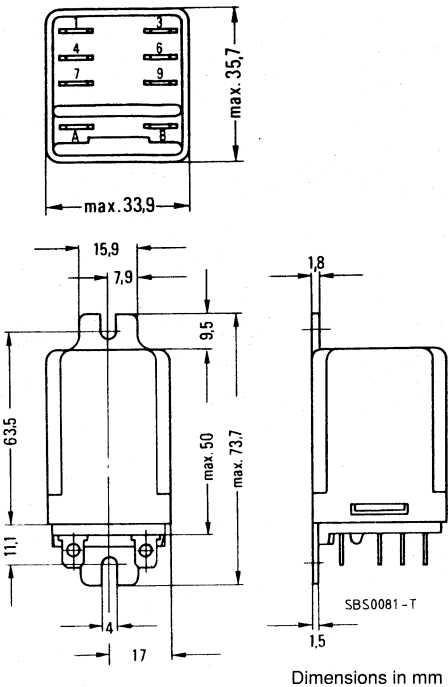
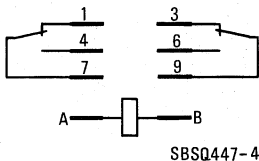
PU: Packing unit, see also page 412

Power Relays KU

POT:KUHP

For dc or ac operation,
neutral, monostable
6,3 mm push-on terminals
Approvals: CSA, UL
Approx. weight: 90 g

Base terminals



Contact material	silver-cadmium oxide
Contact arrangement	2 changeover contacts
Contact ratings:	
Max. switching voltage	150 Vdc/600 Vac
Max. switching current	20 A
Max. continuous current	20 A
Max. power rating	4800 VA (240 Vac), 560 W (28Vdc)

Rated voltage	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU Pcs/ea	Price each				
				PU +	100 +	500 +	1000 +	
12 Vdc	120	POT: KUHP-11D51-12	5					
24 Vdc	472	POT: KUHP-11D51-24	5					
24 Vac	72 ¹⁾	POT: KUHP-11A51-24	5					
240 Vac	7200 ¹⁾	POT: KUHP-11A51-240	5					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

General-Purpose Relays K10

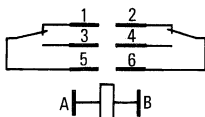
POT:K10P-11

For dc or ac operation,
neutral, monostable
Quick connect/solder terminals

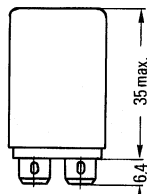
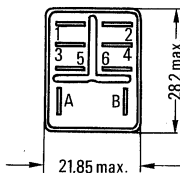
Approvals: UL, CSA

Approx. weight: 51 g

Base terminals



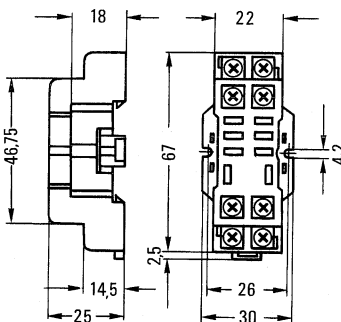
SBS0448-C



SBS0449-K Dimensions in mm

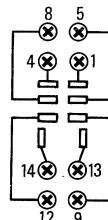
DIN rail, snap-mount socket with screw terminals POT:27E895

Contact material	silver-cadmium oxide
Cont. arrangement	2 changeover contacts
Contact ratings:	
Switching voltage max.	110 Vdc/300 Vac
Switching current max.	20 A
Continuous current max.	13 A
Power rating max.	300 W/2800 VA (30 Vdc)



SBS0478-Y

Base terminals



SBS0450-K

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
					Pcs/ea	PU +	100 +	500 +	1000 +
12 Vdc	9 ... 19	160	POT: K10P-11D15-12	10					
24 Vdc	18 ... 36,1	650	POT: K10P-11D15-24	10					
24 Vac	20,4 ... 28,8	160	POT: K10P-11A15-24	10					
120 Vac	102 ... 144	3900	POT: K10P-11A15-120	10					
240 Vac	204 ... 288	12000	POT: K10P-11A15-240	10					
—	—	—	POT: 27E895	10					
—	—	—	POT: 20C297 ¹⁾	10					

¹⁾ Hold-down spring for socket

PU: Packing unit, see also page 412

PC Board Relays T90

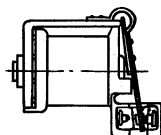
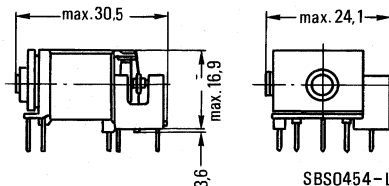
POT:T90

For dc operation, neutral, monostable
Printed circuit terminals
Open or sealed (immersion cleanable)

Approvals: CSA, UL

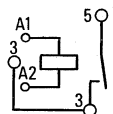
Approx. weight: open version 25 g
sealed version 30 g

Open version POT:T90N



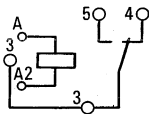
Base terminals

1 make contact



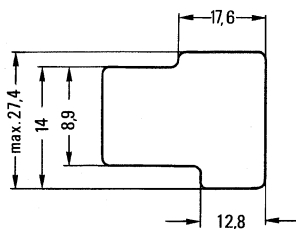
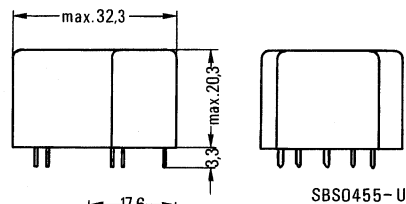
SBS0451-W

1 changeover contact

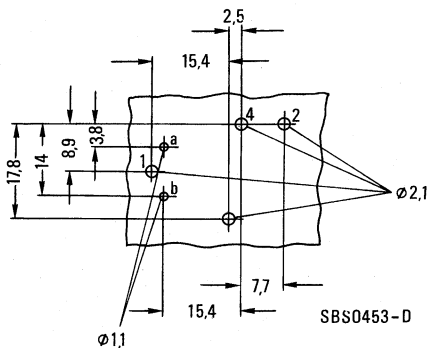


SBS0452-5

Sealed version POT:T90S



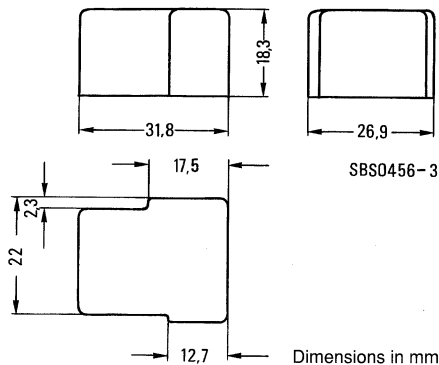
Mounting hole layout
(View from the wiring side)



Dimensions in mm

PC Board Relays T90

Dust cover for open-style relays
POT:35C650B
Approx. weight: 5 g



Ordering code	T90N1D12-	T90N5D12- T90S5D12-
Contact material	silver-cadmium oxide	silver-cadmium oxide
Contact arrangement	1 make contact	1 changeover contact
Contact ratings:		
Max. switching voltage	150 Vdc/480 Vac	150 Vdc/480 Vac
Max. switching current	80 A (240 Vac) 30 A (28 Vdc)	80 A (240 Vac) 30 A (28 Vdc)
Max. continuous current	30 A	20 A

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
12	9 ... 14,4	155	POT:T90N1D12-12	25					
24	18 ... 28,8	660	POT:T90N1D12-24	25					
12	9 ... 14,4	155	POT:T90N5D12-12	25					
24	18 ... 28,8	660	POT:T90N5D12-24	25					
12	9 ... 14,4	155	POT:T90S5D12-12	25					
24	18 ... 28,8	660	POT:T90S5D12-24	25					
—	—	—	POT:35C650B	25					

PU: Packing unit, see also page 412

461

Power Relays 15

V23008-A*** for ac operation

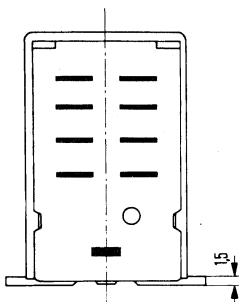
V23009-A*** for dc operation

Neutral, monostable

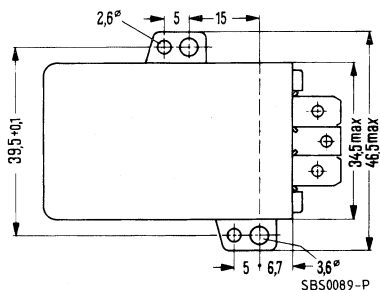
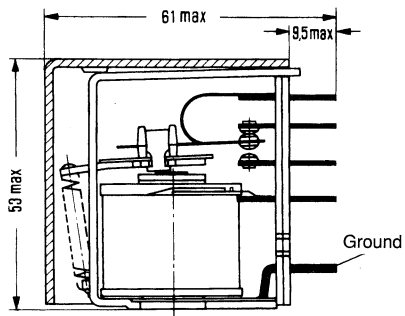
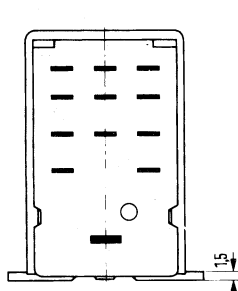
With flat terminals suitable for
6,3 or 4,8 mm push-on connectors
in acc. with DIN 46245 or DIN 46247

Approx. weight: 130 g

Version with
2 changeover contacts



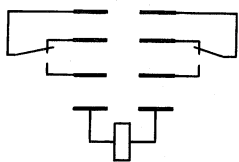
3 changeover contacts



Dimensions in mm

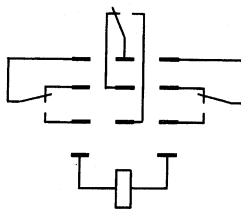
Base terminals

2 changeover contacts



SBS0459-S

3 changeover contacts



SBS0460-V

View from the wiring side

Power Relays 15

Ordering code, block 3	A32	A52	A51	A101	
Contact material	silver nickel		silver	silver nickel	
Contact arrangement	2 makes	2 changeovers		3 changeovers	
Contact ratings:					
Max. switching voltage				300 Vdc/250 Vac	300 Vdc/250 Vac
Max. switching current ¹⁾				40 A	20 A
Max. continuous current				15 A	8 A
Max. power rating				up to 24 Vdc: 360 W	up to 24 Vdc: 360 W
				40 Vdc: 140 W	40 Vdc: 140 W
				60 Vdc: 80 W	60 Vdc: 80 W
				250 Vdc: 100 W	250 Vdc: 100 W
	250 Vac: 10 kVA	250 Vac: 5 kVA			

Rated voltage	DC coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
			Pcs/ea	PU +	100 +	500 +	1000 +	
24 Vac	22	V23008-A5-A52	5					
220 Vac	2900	V23008-A2-A52	5					
24 Vac	22	V23008-A5-A101	5					
110 Vac	620	V23008-A15-A101	5					
220 Vac	2900	V23008-A2-A101	5					
6 Vdc	22	V23009-A5-A52	5					
12 Vdc	85	V23009-A6-A52	5					
24 Vdc	300	V23009-A7-A32	5					
24 Vdc	300	V23009-A7-A51	5					
24 Vdc	300	V23009-A7-A52	5					
48 Vdc	1000	V23009-A1-A52	5					
60 Vdc	2100	V23009-A8-A52	5					
12 Vdc	85	V23009-A6-A101	5					
24 Vdc	300	V23009-A7-A101	5					

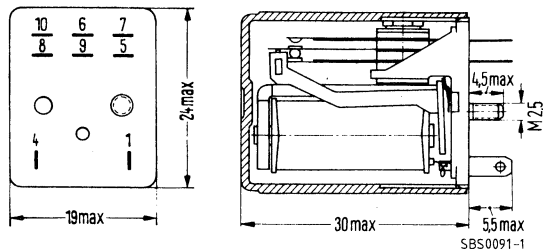
¹⁾ The current of 40 A may flow for a maximum of 4 seconds up to 10 % on-time.

PU: Packing unit, see also page 412

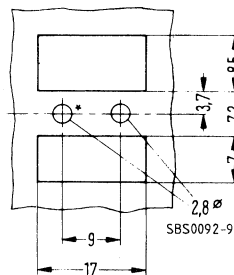
Cradle Relays N

Size I
V23154-C***

For dc operation,
neutral, monostable
Plug-in or screw fixing
Approx. weight: 20 g



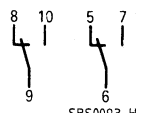
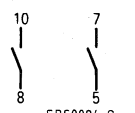
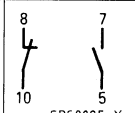
Mounting hole layout



* This hole is omitted if
the mounting hole layout
is intended for the socket.

Dimensions in mm

Base terminals

Ordering code, block 3	B104 B604	C104	F105	F106
Contact arrangement	21-21		1-1	2-1
Symbols with base connections	 SBS0093-H		 SBS0094-Q	 SBS0095-Y
4 —  — 1				

Ordering code, block 3	B1 .. or C1 ..	B6 ..	F1 ..
Contact material	silver, gold-flashed	gold F	silver, gold-flashed
Contact ratings:			
Max. switching voltage	150 Vdc/125 Vac	36 Vdc/30 Vac	250 Vdc/ac
Max. switching current	2 A	0.2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	5 W 5 VA	50 ... 140 W (voltage-dependent) 500 VA

Cradle Relays N

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
Single contacts								
3 ... 10,5	58	V23154-C712-B104	5					
4,4 ... 14	110	V23154-C715-B104	5					
5 ... 16,5	150	V23154-C716-B104	5					
6 ... 20	220	V23154-C717-B104	5					
7,9 ... 24	325	V23154-C719-B104	5					
9,8 ... 32	550	V23154-C720-B104	5					
13,8 ... 32	550	V23154-C720-F106	5					
13 ... 40	890	V23154-C721-B104	5					
13 ... 40	890	V23154-C721-B604	5					
13,2 ... 40	890	V23154-C721-F105	5					
18 ... 40	890	V23154-C721-F106	5					
19 ... 54	1700 ¹⁾	V23154-C722-B104	5					
27,6 ... 75	3200 ¹⁾	V23154-C726-B104	5					
40,8 ... 115	7600 ¹⁾	V23154-C704-B104	5					
59 ... 190	20900 ¹⁾	V23154-C703-B104	5					
Bifurcated contacts								
13 ... 32	550	V23154-C720-C104	5					
17,5 ... 40	890	V23154-C721-C104	5					
15,6 ... 54	1700 ¹⁾	V23154-C722-C104	5					
36 ... 75	3200 ¹⁾	V23154-C726-C104	5					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

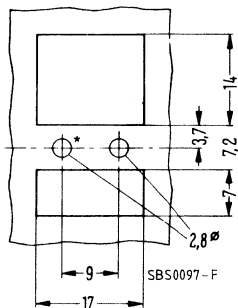
Cradle Relays N

Size II
V23154-D***

For dc operation,
neutral, monostable
Plug-in or screw fixing

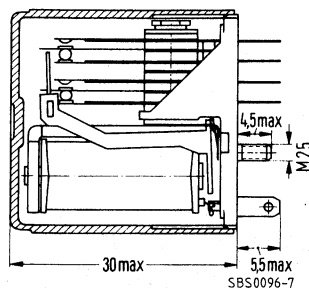
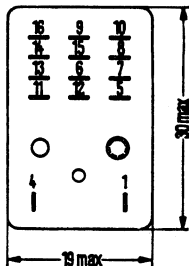
Approx. weight: 25 g

Mounting hole layout



* This hole is omitted if
the mounting hole layout
is intended for the socket.

Dimensions in mm



Base terminals

Ordering code, block 3	B112	C112	B110 B610	C110	F104
Contact arrangement	1-1-1-1-1-1		21-21-21-21		21-21
Symbols with base connections					

Ordering code, block 3	B1 .. or C1 ..	B6 ..or C4..	F1 ..
Contact material	silver, gold-flashed	gold F	silver, gold-flashed
Contact ratings:			
Max. switching voltage	150 Vdc/125 Vac	36 Vdc/30 Vac	250 Vdc/ac
Max. switching current	2 A	0.2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	5 W 5 VA	50 ... 140 W (voltage-dependent) 500 VA

Cradle Relays N

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
Single contacts								
4,2 ... 10,5	58	V23154-D712-B110	5					
4,2 ... 10,5	58	V23154-D712-F104	5					
5,5 ... 14	110	V23154-D715-B110	5					
5,5 ... 14	110	V23154-D715-F104	5					
6,8 ... 16,5	150	V23154-D716-B110	5					
6,8 ... 16,5	150	V23154-D716-F104	5					
8,3 ... 20	220	V23154-D717-B110	5					
8,3 ... 20	220	V23154-D717-F104	5					
10 ... 24	325	V23154-D719-B110	5					
10 ... 24	325	V23154-D719-F104	5					
12,5 ... 32	550	V23154-D720-B110	5					
12,5 ... 32	550	V23154-D720-F104	5					
16,8 ... 36	700	V23154-D421-B110	5					
16,8 ... 36	700	V23154-D421-F104	5					
17 ... 40	890	V23154-D721-B110	5					
17 ... 40	890	V23154-D721-B112	5					
17 ... 40	890	V23154-D721-B610	5					
17 ... 40	890	V23154-D721-F104	5					
25 ... 54	1700 ¹⁾	V23154-D722-B110	5					
25 ... 54	1700 ¹⁾	V23154-D722-F104	5					
35 ... 75	3200 ¹⁾	V23154-D726-B110	5					
35 ... 75	3200 ¹⁾	V23154-D726-B112	5					
35 ... 75	3200 ¹⁾	V23154-D726-F104	5					
52 ... 115	7600 ¹⁾	V23154-D704-B110	5					
52 ... 115	7600 ¹⁾	V23154-D704-B112	5					
52 ... 115	7600 ¹⁾	V23154-D704-F104	5					
95 ... 190	20900 ¹⁾	V23154-D703-B110	5					
95 ... 190	20900 ¹⁾	V23154-D703-F104	5					
Bifurcated contacts								
13 ... 20	220	V23154-D717-C110	5					
20 ... 32	550	V23154-D720-C110	5					
20 ... 32	550	V23154-D720-C410	5					
26 ... 40	890	V23154-D721-C110	5					
42 ... 54	1700 ¹⁾	V23154-D722-C110	5					
57 ... 75	3200 ¹⁾	V23154-D726-C110	5					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

Cradle Relays N

Ordering code, block 3	B1 ..	F1 ..
Contact material	silver, gold-flashed	silver, gold-flashed
Contact ratings:		
Max. switching voltage	150 Vdc/125 Vac	250 Vdc/ac
Max. switching current	2 A	5 A
Max. power rating	25 ... 70 W (voltage-dependent) 50 VA	50 ... 140 W (voltage-dependent) 500 VA

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	

Single contacts

9,8 ... 32	550	V23154-M720-B104	5					
13 ... 40	890	V23154-M721-B104	5					
19 ... 54	1700 ¹⁾	V23154-M722-B104	5					
8,3 ... 20	220	V23154-N717-B110	5					
8,3 ... 20	220	V23154-N717-F104	5					
10 ... 24	325	V23154-N719-B110	5					
12,5 ... 32	550	V23154-N720-B110	5					
12,5 ... 32	550	V23154-N720-F104	5					
17 ... 40	890	V23154-N721-B110	5					
17 ... 40	890	V23154-N721-F104	5					
35 ... 75	3200 ¹⁾	V23154-N726-B110	5					
35 ... 75	3200 ¹⁾	V23154-N726-F104	5					

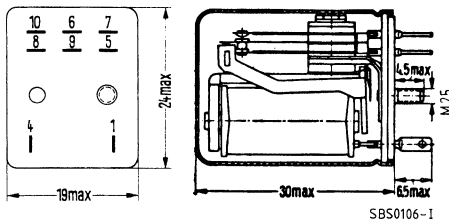
¹⁾ ± 15 %

PU: Packing unit, see also page 412

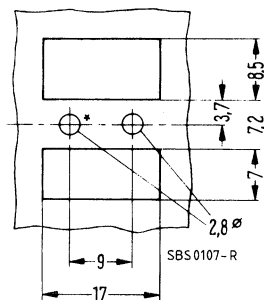
Cradle Relays N

Size I
V23162-A***

For dc operation
neutral, monostable
Hermetically sealed
Plug-in or screw fixing
Approx. weight: 30 g



Mounting hole layout



* This hole is omitted if the mounting hole layout is intended for the socket

Dimensions in mm

Base terminals

Ordering code, block 3	B104 B604	C104 C404	F105
Contact arrangement	21-21		1-1
Symbols with base connections			
4			1

Ordering code, block 3	B1 .. or C1 ..	B6 ..or C4..	F1 ..
Contact material	silver, gold-flashed	gold F	silver, gold-flashed
Contact ratings:			
Max. switching voltage	150 Vdc/125 Vac	36 Vdc/30 Vac	250 Vdc/ac
Max. switching current	2 A	0.2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	5 W 5 VA	50 ... 140 W (voltage-dependent) 500 VA

Cradle Relays N

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
Single contacts								
7,9 ... 24	325	V23162-A719-B104	2					
9,8 ... 32	550	V23162-A720-B104	2					
13 ... 40	890	V23162-A721-B104	2					
15,5 ... 40	890	V23162-A721-F105	2					
19 ... 54	1700 ¹⁾	V23162-A722-B104	2					
19 ... 54	1700 ¹⁾	V23162-A722-B604	2					
27,6 ... 75	3200 ¹⁾	V23162-A726-B104	2					
Bifurcated contacts								
17,5 ... 40	890	V23162-A721-C404	2					
17,5 ... 40	890	V23162-A721-C104	2					
36 ... 75	3200 ¹⁾	V23162-A726-C404	2					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

Cradle Relays N

Size II

V23162-B***

With tinned contact blades

V23162-H***

With gold-plated contact blades

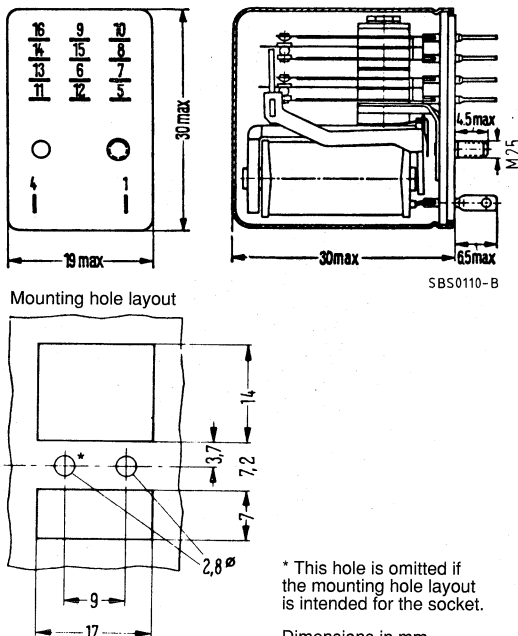
For dc operation,

neutral, monostable

Hermetically sealed

Plug-in or screw fixing

Approx. weight: 35 g



Base terminals

Ordering code, block 3	B110 B610	C110 C410	F104
Contact arrangement	21-21-21-21		21-21
Symbols with base connections			

Dimensions in mm

Ordering code, block 3	B1 .. or C1 ..	B6 ..or C4..	F1 ..
Contact material	silver, gold-flashed	gold F	silver, gold-flashed
Contact ratings:			
Max. switching voltage	150 Vdc/125 Vac	36 Vdc/30 Vac	250 Vdc/ac
Max. switching current	2 A	0,2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	5 W 5 VA	50 ... 140 W (voltage-dependent) 500 VA

Cradle Relays N

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
Single contacts								
8,3 ... 20	220	V23162-B717-B110	2					
10 ... 24	325	V23162-B719-B110	2					
10 ... 24	325	V23162-B719-F104	2					
12,5 ... 32	550	V23162-B720-B110	2					
12,5 ... 32	550	V23162-B720-F104	2					
17 ... 40	890	V23162-B721-B110	2					
17 ... 40	890	V23162-B721-B610	2					
17 ... 40	890	V23162-B721-F104	2					
25 ... 54	1700 ¹⁾	V23162-B722-B110	2					
25 ... 54	1700 ¹⁾	V23162-B722-B610	2					
25 ... 54	1700 ¹⁾	V23162-B722-F104	2					
35 ... 75	3200 ¹⁾	V23162-B726-B110	2					
35 ... 75	3200 ¹⁾	V23162-B726-F104	2					
17 ... 40	890	V23162-H721-B110	2					
Bifurcated contacts								
20 ... 32	550	V23162-B720-C110	2					
57 ... 75	3200 ¹⁾	V23162-B726-C110	2					
20 ... 32	550	V23162-B720-C410	2					
20 ... 32	550	V23162-H720-C410	2					

¹⁾ ± 15 %

PU: Packing unit, see also page 412

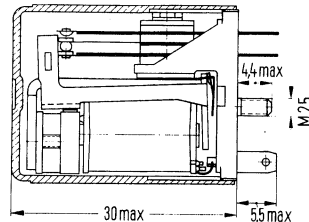
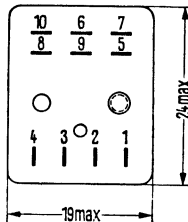
Cradle Relays P

Size I

V23003-A***

For dc operation,
polarized, bistable
Plug-in or screw fixing

Approx. weight: 20 g

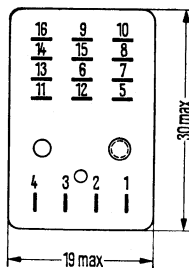


Size II

V23003-B***

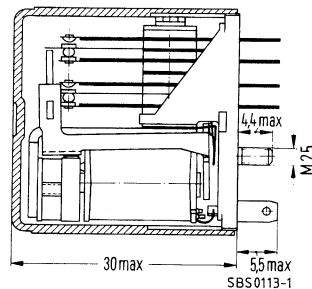
For dc operation,
polarized, bistable
Plug-in or screw fixing

Approx. weight: 25 g



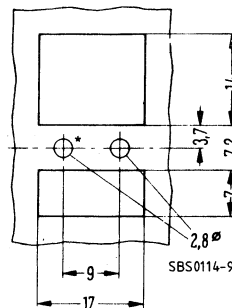
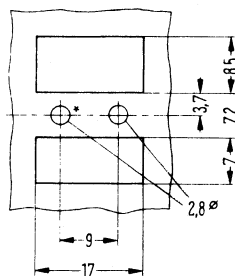
Mounting hole layout

Size I



Size II

* This hole is omitted if the mounting hole layout is intended for the socket.



Dimensions in mm

Base terminals

Ordering code, block 3	B104	C104	B110	C110	F104
Contact arrangement	21-21		21-21-21-21		21-21
Symbols with base connections					
Coil with 2 windings					

Note: OFF position make contact (1) open, break contact (2) closed. If plus potential is applied to terminal 3 or 4 the relay assumes the OFF position.

Cradle Relays P

Ordering code, block 3	B1 .. or C1 ..	F1 ..
Contact material	silver, gold-flashed	silver, gold-flashed
Contact ratings:		
Max. switching voltage	150 Vdc/125 Vac	250 Vdc/ac
Max. switching current	2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	50 ... 140 W (voltage-dependent) 500 VA

Voltage range at 20 °C		Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Wind- ing	Vdc				Pcs/ea	PU +	100 +	500 +	1000 +

Single contacts

I	9,4 ... 13,5	100	V23003-A25-B104	5					
II	9,4 ... 13,5	100							
I	19,5 ... 26,5	400 ¹⁾	V23003-A37-B104	5					
II	19,5 ... 25	340							
I	40 ... 49	1400 ¹⁾	V23003-A64-B104	5					
II	40 ... 49	1400 ¹⁾							
I	51,5 ... 65	2400 ¹⁾	V23003-A44-B104	5					
II	51,5 ... 65	2400 ¹⁾							
I	9,4 ... 13,5	100	V23003-B25-B110	5					
II	9,4 ... 13,5	100							
I	9,4 ... 13,5	100	V23003-B25-F104	5					
II	9,4 ... 13,5	100							
I	19,5 ... 26,5	400 ¹⁾	V23003-B37-B110	5					
II	19,5 ... 25	340							
I	19,5 ... 26,5	400 ¹⁾	V23003-B37-F104	5					
II	19,5 ... 25	340							
I	40 ... 49	1400 ¹⁾	V23003-B64-B110	5					
II	40 ... 49	1400 ¹⁾							
I	51,5 ... 65	2400 ¹⁾	V23003-B44-B110	5					
II	51,5 ... 65	2400 ¹⁾							

Bifurcated contacts

I	19,5 ... 26,5	400 ¹⁾	V23003-A37-C104	5					
II	19,5 ... 25	340							
I	19,5 ... 26,5	400 ¹⁾	V23003-B37-C110	5					
II	19,5 ... 25	340							

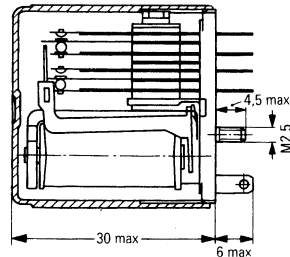
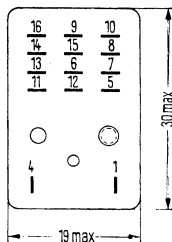
¹⁾ ± 15 %

PU: Packing unit, see also page 412

Cradle Relays S

Size II V23054-D***

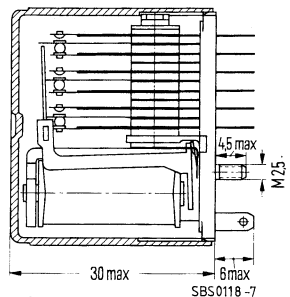
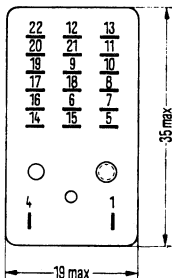
For dc operation,
neutral, monostable
Plug-in or screw fixing
Approx. weight: 25 g



Size III V23054-E***

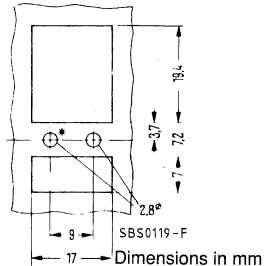
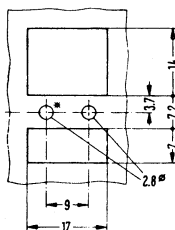
For dc operation,
neutral, monostable
Plug-in or screw fixing
Approx. weight: 30 g

The cradle relay S has a stronger magnet system in comparison with that of cradle relay N, which results in a wider range of operating voltages.



Mounting hole layout
Size II

Size III



* This hole is omitted if
the mounting hole layout
is intended for the socket.

Base terminals

Ordering code, block 3	B110	C110	B133	C133	F104	F110	C112
Contact arrangement	21-21-21-21	21-21-21-21-21	21-21-21-21-21-21	21-21	21-21	21-21-21-21	1-1-1-1-1-1
Symbols with base connections	 SBS0120-1	 SBS0121-R	 SBS0122-Z	 SBS0123-8	 SBS0124-G	 SBS0124-G	 SBS0124-G

Cradle Relays S

Ordering code, block 3	B1 .. or C1 ..	F1 ..
Contact material	silver, gold-flashed	silver, gold-flashed
Contact ratings:		
Max. switching voltage	150 Vdc/125 Vac	250 Vdc/ac
Max. switching current	2 A	5 A
Max. power rating	25 ... 70 W (voltage-dependent) 50 VA	50 ... 140 W (voltage-dependent) 500 VA

Voltage range at 20 °C	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	

Single contacts

13 ... 39	630	V23054-D20-B110	5					
13,5 ... 39	630	V23054-D1020-F104	5					
4,5 ... 9	33	V23054-E1011-F110	5					
8,5 ... 18	130	V23054-E1015-F110	5					
8,5 ... 21,5	185	V23054-E16-B133	5					
10 ... 21,5	185	V23054-E1016-F110	5					
12,5 ... 31	390	V23054-E19-B133	5					
15,5 ... 31	390	V23054-E1019-F110	5					
15,5 ... 39	630	V23054-E20-B133	5					
19 ... 39	630	V23054-E1020-F110	5					
21 ... 50	1050	V23054-E21-B133	5					
29 ... 66	1900 ¹⁾	V23054-E22-B133	5					
35 ... 66	1900 ¹⁾	V23054-E1022-F110	5					
43 ... 94	3800 ¹⁾	V23054-E26-B133	5					
140 ... 240	25000 ¹⁾	V23054-E1003-F110	5					

Bifurcated contacts

18 ... 39	630	V23054-D20-C110	5					
38,5 ... 94	3800 ¹⁾	V23054-D26-C112	5					
20 ... 31	390	V23054-E19-C133	5					

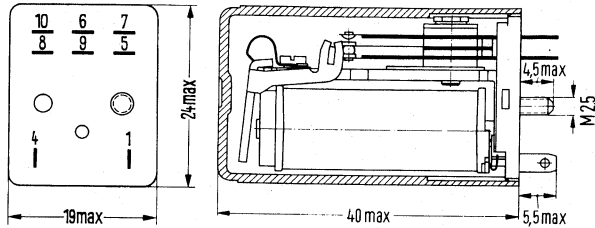
¹⁾ ± 15 %

PU: Packing unit, see also page 412

Cradle Relays W

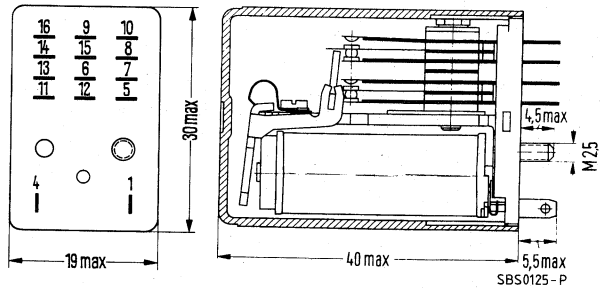
Size I V23005-A***

For ac operation,
neutral, monostable
Plug-in or screw fixing
Approx. weight: 35 g

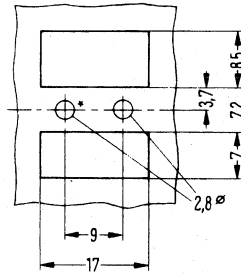


Size II V23005-B***

For ac operation,
neutral, monostable
Plug-in or screw fixing
Approx. weight: 40 g

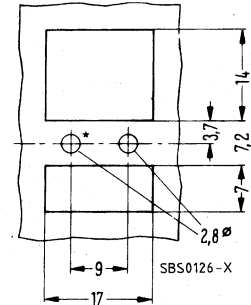


Mounting hole layout
Size I



* This hole is omitted if
the mounting hole layout
is intended for the socket.

Size II



Dimensions in mm

Base terminals

Ordering code, block 3	B104 B604	B110 B610	F106	F104
Contact arrangement	21-21	21-21-21-21	2-1	21-21
Symbols with base connections	 SBS0127-6	 SBS0128-E	 SBS0129-M	 SBS0130-Q

Cradle Relays W

Ordering code, block 3	B1 ..	B6 ..	F1 ..
Contact material	silver, gold-flashed	gold F	silver, gold-flashed
Contact ratings:			
Max. switching voltage	150 Vdc/125 Vac	36 Vdc/30 Vac	250Vdc/ac
Max. switching current	2 A	0,2 A	5 A
Max. power rating	35 ... 70 W (voltage-dependent) 50 VA	5 W 5 VA	50 ... 140 W (voltage-dependent) 500 VA

Rated voltage	DC coil resistance at 20 °C ± 15%	Ordering code	PU	Price each				
Vac	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
24	170 ¹⁾	V23005-A10-B104	5					
220	14000	V23005-A4-B104	5					
220	14000	V23005-A4-B604	5					
220	14000	V23005-A4-F106	5					
24	170 ¹⁾	V23005-B10-B110	5					
24	170 ¹⁾	V23005-B10-F104	5					
110	3200	V23005-B7-B110	5					
110	3200	V23005-B7-F104	5					
220	14000	V23005-B4-B110	5					
220	14000	V23005-B4-B610	5					
220	14000	V23005-B4-F104	5					

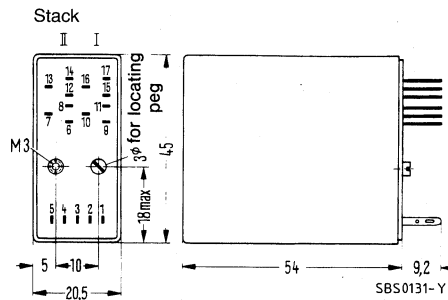
¹⁾ ± 10 %

PU: Packing unit, see also page 412

Small General-Purpose Relays

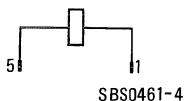
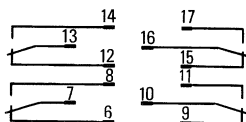
V23006-G***

For dc operation,
neutral, monostable
With individual solder connections
Plug-in or screw fixing
For sockets refer to page 501
Approx. weight: 90 g

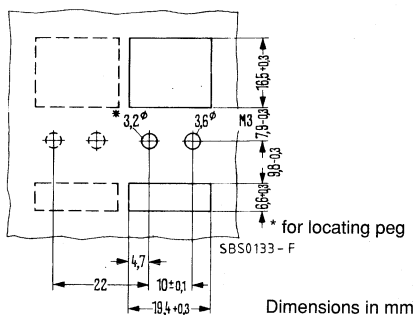


Base terminals

View from
the wiring side



Mounting hole layout



Contact arrangement	Single contacts	Bifurcated contacts
Contact material	silver, gold-flashed	silver, gold-flashed
Contact ratings:		
Max. switching voltage	380 Vac/450 Vdc	380 Vac/450 Vdc
Max. switching current	4 A	2 A
Max. power rating	up to 380 Vac/40 Vdc: 160 W up to 60 Vdc: 100 W up to 450 Vdc: 60 W	30 W

Small General-Purpose Relays

Rated voltage	Coil resistance at 20 °C ± 10%	Contact arrangement Changeover contacts	Ordering code	PU	Price each				
				Pcs/ea	PU +	100 +	500 +	1000 +	
Vdc	Ω								
Single contacts									
24	600	2	V23006-G1017-A32	1					
24	400	4	V23006-G1016-A34	1					
60	2000	4	V23006-G1020-A34	1					
Bifurcated contacts									
24	600	2	V23006-G1017-A2	1					
24	400	4	V23006-G1016-A4	1					

PU: Packing unit, see also page 412

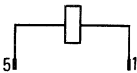
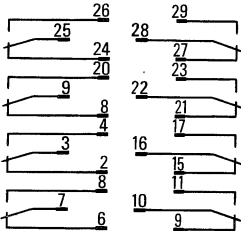
Small General-Purpose Relays

V23006-H★★★

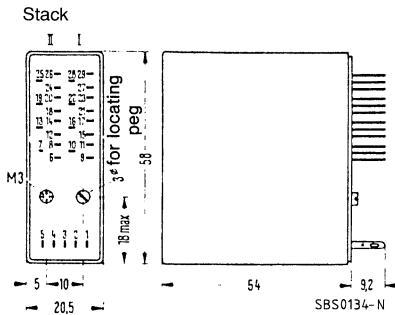
For dc operation,
neutral, monostable
With individual solder connections
Plug-in or screw fixing
For sockets refer to page 501
Approx. weight: 90 g

Base terminals

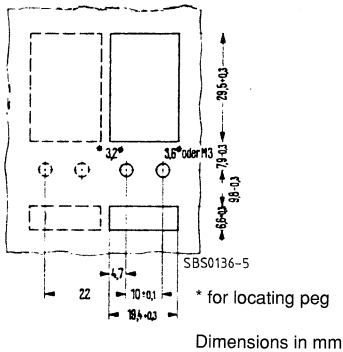
View from
the wiring side



SBS0462-C



Mounting hole layout



Dimensions in mm

For contact ratings and contact material refer to page 480

Rated voltage	Coil resistance at 20 °C ± 10% Ω	Contact arrangement Changeover contacts	Ordering code	PU	Price each				
					Pcs/ea	PU	100 +	500 +	1000 +
Vdc									
Bifurcated contacts									
24	220	8	V23006-H1012-A8	1					
Single contacts									
24	220	6	V23006-H1012-A36	1					
24	220	8	V23006-H1012-A38	1					

PU: Packing unit, see also page 412

483

Power Relays ZW

Contact material	silver
Contact arrangement	4 make and 2 break contacts, forcibly guided
Contact ratings:	
Max. switching voltage	300 Vdc/250 Vac
Max. switching current	4 A
Max. continuous current	4 A
Max. power rating	50 ... 120 W (voltage-dependent) 1000 VA

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10% Ω	Ordering code	PU	Price each				
Vdc	Vdc			Pcs/ea	PU +	100 +	500 +		
24	16,8 ... 38	460	V23048-A1003-A101	1					

PU: Packing unit, see also page 412

DIL Reed Relays

V23100-V40★★

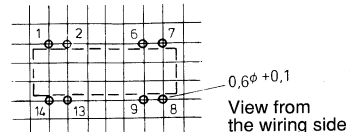
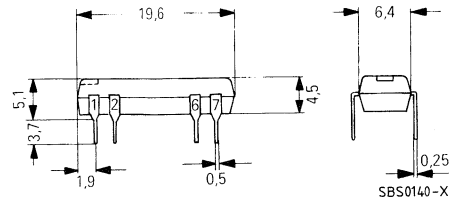
Reed relay in dual-in-line package, for dc operation, neutral, monostable, printed circuit terminals, pin arrangement for 2,54 mm grid in acc. with DIN 40801 and DIN 40803, fine

Approx. weight: 2 g

Contact arrangement: 1 make contact

Contact ratings:

Max. switching voltage	100 V
Max. switching current	0,5 A
Max. power rating	10 W



Relay (standard version)	Relay with electrostatic shield	Relay with clamp diode (spark suppression)	Relay with clamp diode (spark suppression) and electrostatic shield
Ordering code, block 3 A	A1	A10	A11
SBS0141-6	SBS0142-E	SBS0143-M	SBS0144-V

Rated coil voltage	Operat- ing voltage	Max. voltage	Coil resistance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Vdc	Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
5	≤ 3,5	16	380	V 23100-V4005-A	20					
5	≤ 3,5	16	380	V 23100-V4005-A1	20					
5	≤ 3,5	16	380	V 23100-V4005-A10	20					
5	≤ 3,5	16	380	V 23100-V4005-A11	20					
12	≤ 8,0	19	530	V 23100-V4012-A	20					
12	≤ 8,0	19	530	V 23100-V4012-A1	20					
12	≤ 8,0	19	530	V 23100-V4012-A10	20					
12	≤ 8,0	19	530	V 23100-V4012-A11	20					
15	≤ 11,5	36,5	2000	V 23100-V4015-A	20					
15	≤ 11,5	36,5	2000	V 23100-V4015-A1	20					
15	≤ 11,5	36,5	2000	V 23100-V4015-A10	20					
15	≤ 11,5	36,5	2000	V 23100-V4015-A11	20					
24	≤ 16	36,5	2000	V 23100-V4024-A	20					
24	≤ 16	36,5	2000	V 23100-V4024-A1	20					
24	≤ 16	36,5	2000	V 23100-V4024-A10	20					
24	≤ 16	36,5	2000	V 23100-V4024-A11	20					

PU: Packing unit, see also page 412

DIL Reed Relays

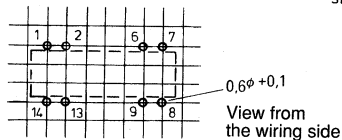
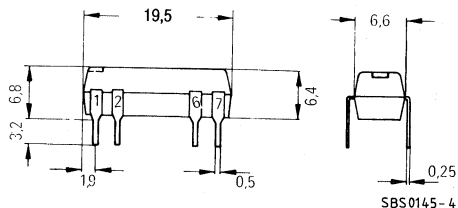
V23100-V43★★

Reed relay in dual-in-line package
for dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, fine
Approx. weight: 2 g

Contact arrangement: 2 make contacts

Contact ratings:

Max. switching voltage	100 V
Max. switching current	0,25 A
Max. power rating	10 W



Dimensions in mm

Relay (standard version)	Relay with clamp diode (spark suppression)
Ordering code, block 3 B	B10

Rated coil voltage	Operat- ing voltage	Max. voltage	Coil resis- tance at 20 °C ± 10 % Ω	Ordering code	PU	Price each				
Vdc	Vdc	Vdc			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
5	≤ 4,2	12	200	V 23100-V4305-B	25					
5	≤ 4,2	12	200	V 23100-V4305-B10	25					
24	≤ 16	40	2150	V 23100-V4324-B	25					
24	≤ 16	40	2150	V 23100-V4324-B10	25					

PU: Packing unit, see also page 412

DIL Reed Relays

V23100-V43**

Reed relay in dual-in-line package
For dc operation, neutral, monostable
Printed circuit terminals
Pin arrangement for 2,54 mm grid in acc.
with DIN 40801 and DIN 40803, fine

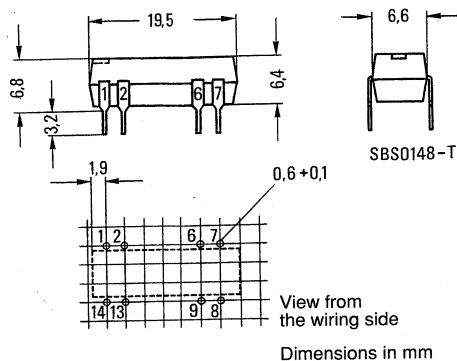
Approx. weight: 2 g

Contact arrangement: 1 changeover contact

Contact ratings:

Max. switching voltage
Max. switching current
Max. power rating

28 V
0,25 A
3 W



Relay (standard version)	Relay with clamp diode (spark suppression)	Relay with clamp diode (spark suppression) and electrostatic shield
Ordering code, block 3 C	C10	C11
SBS0149-2	SBS0150-5	SBS0151-0

Rated coil voltage	Operating voltage	Max. voltage	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
5	≤ 3,7	12	200	V 23100-V4305-C	25					
5	≤ 3,7	12	200	V 23100-V4305-C10	25					
5	≤ 3,7	12	200	V 23100-V4305-C11	25					
12	≤ 8,0	19	500	V 23100-V4312-C	25					
12	≤ 8,0	19	500	V 23100-V4312-C10	25					
24	≤ 16	40	2150	V 23100-V4324-C	25					
24	≤ 16	40	2150	V 23100-V4324-C10	25					
24	≤ 16	40	2150	V 23100-V4324-C11	25					

PU: Packing unit, see also page 412

Reed Relays V6

V23100-V6***

For dc operation,
neutral and polarized, monostable
Printed circuit terminals
Pin arrangement for 2,5 mm grid in acc.
with DIN 40801 and DIN 40803, fine

Approx. weight: 15 g

Base terminals

1 make contact



SBS0464-T

2 make contacts



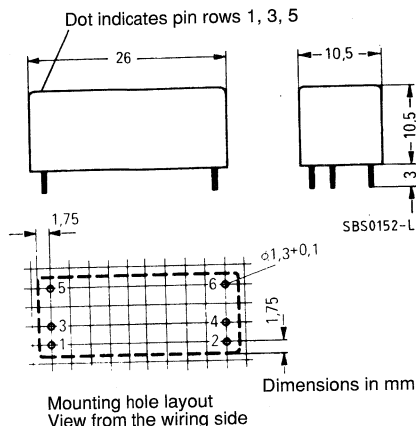
SBS0465-2

1 make and 1 break contact



SBS0466-A

Circuit symbols drawn in OFF position.
If plus potential is applied to terminal 1,
the relay assumes the ON position.



Contact ratings:

Max. switching voltage	100 V
Max. switching current	0,25 A (for break) 0,5 A (for make)
Max. power rating	10 W

Rated voltage	Voltage range at 20 °C	Coil resistance at 20 °C ± 10 %	Ordering code	PU	Price each				
Vdc	Vdc	Ω		Pcs/ea	PU +	100 +	500 +	1000 +	
1 make contact (neutral, monostable)									
12	8,4 ... 21,6	1100	V23100-V6002-A101	10					
24	16,4 ... 42,5	3860 ¹⁾	V23100-V6003-A101	10					
2 make contacts (neutral, monostable)									
6	4,5 ... 10,8	430	V23100-V6001-A201	10					
12	8,4 ... 21,6	1100	V23100-V6002-A201	10					
24	16,4 ... 42,5	3860 ¹⁾	V23100-V6003-A201	10					
1 make and 1 break contact (polarized, monostable)									
12	8,4 ... 21,6	1100	V23100-V6002-A112	10					
24	16,4 ... 42,5	3860 ¹⁾	V23100-V6003-A112	10					

¹⁾ ± 15 %

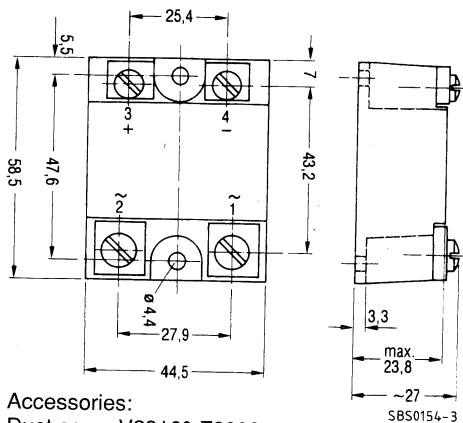
PU: Packing unit, see also page 412

Solid State Relays

V23100-S***-A*** Types A2 and A8

Screw terminals

Approx. weight: 115 g



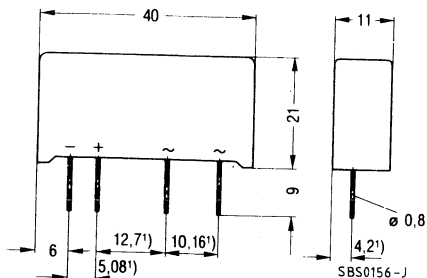
Accessories:
Dust cover V23100-Z2008

V23103-S***-B402 Type B4

Printed circuit terminals

Approvals: SEV, UL

Approx. weight: 18,5 g



Dimensions in mm

1) Refers to wire outlet through sealing compound

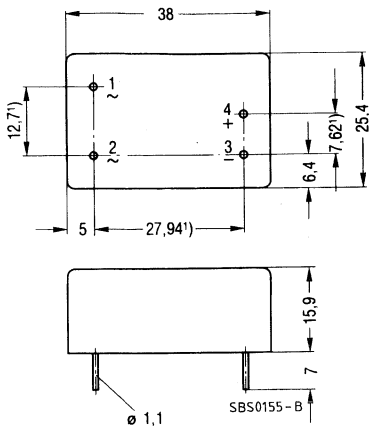
Solid State Relays

V23100-S302-A303

Type A3

Printed circuit terminals

Approx. weight: 22 g



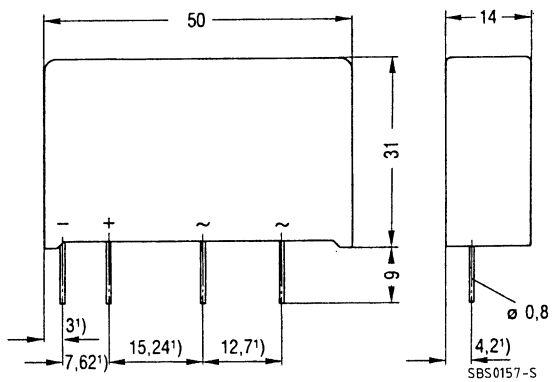
V23103-S***-B105

Type B1

Printed circuit terminals

Approvals: VDE, SEV, CSA, UL

Approx. weight: 35 g



Dimensions in mm

1) Refers to wire outlet through sealing compound

Solid State Relays

Type	A2	A2	A2
Ordering code	V23100-S302-A210	V23100-S302-A225	V23100-S302-A240

Load circuit

Zero-point switch		yes	yes	yes
Switching current	A _{rms}	10	25	40
Switching voltage	V _{rms}	240	240	240
Switching voltage range	V _{rms}	24 ... 280	24 ... 280	24 ... 280
Repetitive peak blocking voltage	V _{pk}	600	600	600
Frequency range	Hz	47 ... 63	47 ... 63	47 ... 63
Min. load current (holding current)	mA _{rms}	50	50	50
Zero voltage	V _s	± 25	± 25	± 25
Critical rate of rise of off-state voltage	V/μs	5	5	5
Peak load integral, 10 ms	A²s	66	450	800
Max. operating time	ms	10	10	10

Control circuit

Control voltage	V _{dc}	3 ... 30	3 ... 30	3 ... 30
Control current at max. control voltage	mA _{dc}	< 20	< 20	< 20
Control circuit resistance	Ω	1500	1500	1500

General

Operating temperature range, typical	°C	− 25 ... + 80	− 25 ... + 80	− 25 ... + 80
Storage temperature range	°C	− 40 ... + 100	− 40 ... + 100	− 40 ... + 100
Test voltage				
input – output	kV _{rms}	2,5	2,5	2,5
input – ground	kV _{rms}	2,5	2,5	2,5
output – ground	kV _{rms}	2,5	2,5	2,5
Insulation resistance	Ω	10 ¹⁰	10 ¹⁰	10 ¹⁰

	Ordering code	PU	Price each				
		Pcs/ea	PU +	100 +	500 +	1000 +	
▼	V23100-S302-A210	2					
	V23100-S302-A225	2					
	V23100-S302-A240	2					
	V23100-S2034-A825	2					
	V23100-S302-A303	5					
	V23103-S2032-B402	5					
	V23103-S2033-B105	5					
	V23103-S4033-B105	5					
	V23103-S2333-B105	5					
	V23100-Z2008	2					

PU: Packing unit, see also page 412

Solid State Relays

	A8	A3	B1	B1	B1	B4
	V23100- S2034-A825	V23100- S302-A303	V23103- S2033-B105	V23103- S2333-B105	V23103- S4033-B105	V23103- S2032-B402

Load circuit

	yes	yes	yes	no	yes	yes
I_{rms}	25	3	5	5	5	2,5
V_{rms}	415	240	380	380	380	240
V_{rms}	24 ... 480	24 ... 280	24 ... 480	24 ... 480	24 ... 480	24 ... 480
V_{pk}	1000	600	1200	1200	1200	600
Hz	47 ... 63	47 ... 63	47 ... 63	47 ... 63	47 ... 63	47 ... 63
mA_{rms}	50	50	50	50	50	50
V_s	± 25	± 30	± 65	—	± 65	± 30
$V/\mu s$	200	5	—	—	—	5
A^2s	265	18	50	50	50	50
ms	10	10	10	0,1	10	10

Control circuit

Vdc	3 ... 30	3 ... 30	3 ... 30	3 ... 20	3 ... 20	3 ... 30
$mAdc$	< 20	< 20	< 30	< 30	< 20	< 30
Ω	1500	1500	1000	680	1000	1000

General

$^{\circ}C$	-25 ... + 80	-25 ... + 80	-25 ... + 80	-25 ... + 80	-25 ... + 80	-25 ... + 80
$^{\circ}C$	-40 ... + 100	-40 ... + 100	-40 ... + 100	-40 ... + 100	-40 ... + 100	-40 ... + 100
kV_{rms}	2,5	2,5	2,5	2,5	4	2,5
kV_{rms}	2,5	—	—	—	—	—
kV_{rms}	2,5	—	—	—	—	—
Ω	10^{10}	10^{10}	10^{10}	10^{10}	10^{10}	10^{10}

Solid State Relays OZ16, EOTZ, EOMZ

Dual-in-line package solid state relay OZ16

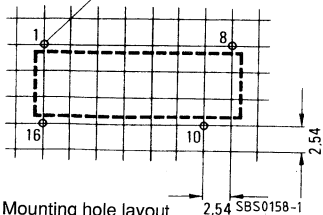
POT: OZ16-65

Printed circuit terminals

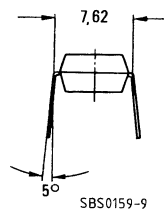
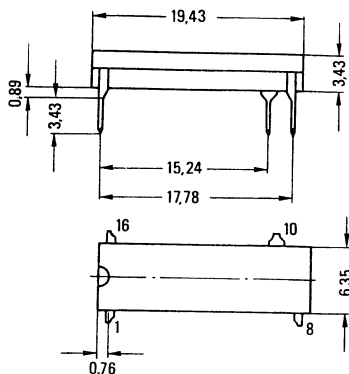
Approvals: UL, CSA

Approx. weight: 2 g

All holes $\varnothing$ 0,6



Mounting hole layout
View from the wiring side



SBS0159-9

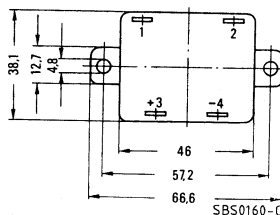
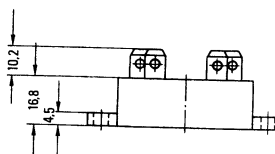
All solid state ac relay EOTZ

POT: EOTZ-240D15

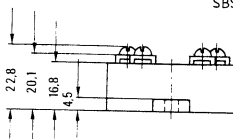
POT: EOTZ-240D25

6,35 mm quick connect terminals

Approx. weight: 56 g



SBS0160-C



All solid state ac relay EOMZ

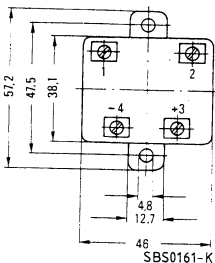
POT: EOMZ-240D15

POT: EOMZ-240D25

Screw terminals

Approvals: UL, CSA

Approx. weight: 56 g



SBS0161-K

Dimensions in mm

Solid State Relays OZ16, EOTZ, EOMZ

Ordering code	POT: OZ16-65	POT: EOTZ-240D15 POT: EOMZ-240D15	POT: EOTZ-240D25 POT: EOMZ-240D25
---------------	-----------------	--	--

Load circuit

Switching current	I_{rms}	1	15	25
Switching voltage	V_{rms}	240	240	240
Switching voltage range	V_{rms}	12 ... 280	20 ... 280	20 ... 280
Repetitive peak blocking voltage	V_{pk}	± 600	± 600	± 600
Frequency range	Hz	47 ... 63	47 ... 63	47 ... 63
Min. load current (holding current)	mA_{rms}	5	20	20
Zero voltage	V_s	5	20	20
Critical rate of rise of off-state voltage	$V/\mu s$	100	—	—
Max. operating time	ms	10	8,3	8,3

Control circuit

Control voltage	V_{dc}	3,5 ... 8	3 ... 32	3 ... 32
Control current	mA_{dc}	≤ 13	≤ 10	≤ 10
Control circuit resistance	Ω	200	200	200

General

Operating/storage temperature range	$^{\circ}C$	-30 ... +85	-30 ... +80	-30 ... +80
Test voltage input – output	kV_{rms}	4	4	4
Insulation resistance	Ω	10^{11}	10^9	10^9

Terminals	Ordering code	PU	Price each				
		Pcs/ea	PU +	100 +	500 +	1000 +	
PC terminals	POT: OZ16-65	25					
Screw terminals	POT: EOTZ-240D15	5					
▼ Screw terminals	POT: EOTZ-240D25	5					
6,35 mm quick connect terminals	POT: EOMZ-240D15	5					
▼ 6,35 mm quick connect terminals	POT: EOMZ-240D25	5					

PU: Packing unit, see also page 412

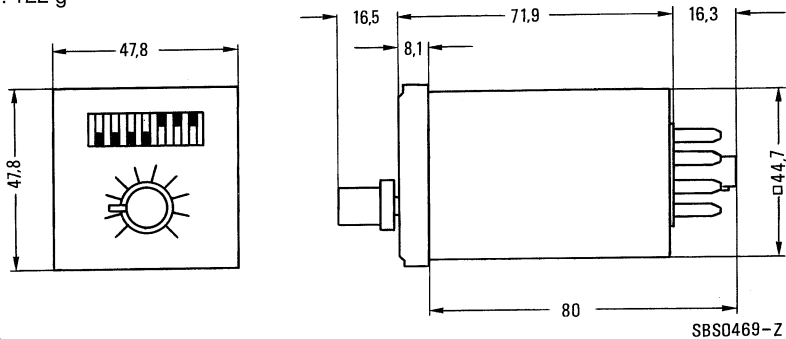
Time Delay Relays CNS

POT: CNS-35-9*

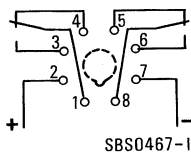
Programmable time delay relay

For plug-in or panel mounting

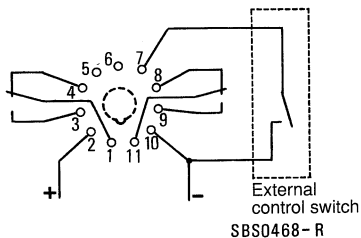
Approx. weight: 122 g



Base terminals
POT: CNS-35-92
(Socket POT: 27E891)



POT: CNS-35-96
(Socket POT: 27E892)



SBS0469-Z
Dimensions in mm

Input

Operating voltage	24 ... 240 Vdc/ac, $\pm 15\%$
Rated power at 24 Vdc/ac	1 W/VA
110 Vdc/120 Vac	5 W/VA
240 Vdc/ac	10 W/VA

Output

Contact arrangement	2 changeover contacts
Max. switching voltage	30 Vdc/240 Vac
Max. switching current	10 A

Ordering code	PU	Price each			
	Pcs/ea	PU +	100 +	500 +	1000 +
▼ POT: CNS-35-92	1				
▼ POT: CNS-35-96	1				

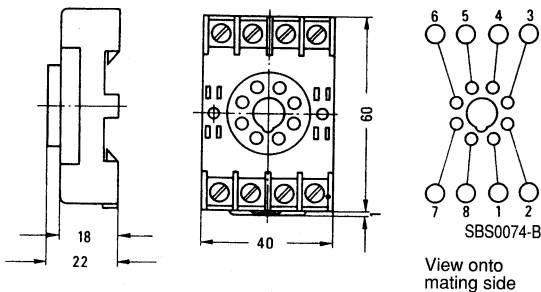
PU: Packing unit, see also page 412

Time Delay Relays CNS

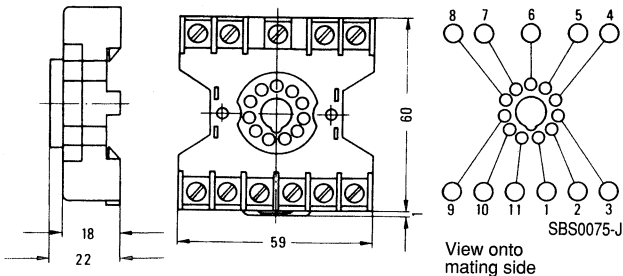
8-pin and 11-pin sockets

Screw terminals
Integrated retainer
For snap-on mounting
onto DIN 46277 rails

8-pin socket, POT: 27E891



11-pin socket, POT: 27E892



Dimensions in mm

Ordering code	PU	Price each			
	Pcs/ea	PU +	100 +	500 +	1000 +
POT: 27E891	5				
POT: 27E892	5				

PU: Packing unit, see also page 412

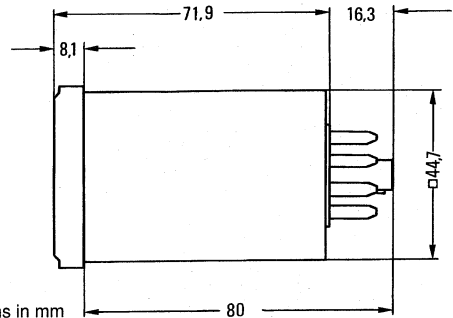
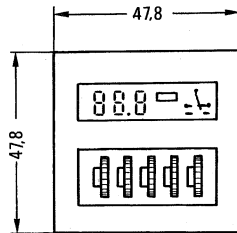
Time Delay Relays CNT

POT: CNT-35-96

Programmable time delay relay/counter

For plug-in or panel mounting

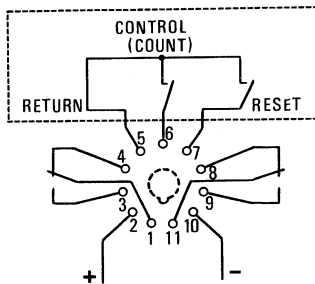
Approx. weight: 122 g



SBS0471-B

Dimensions in mm

Base terminals



External control switch

11-pin socket, POT: 27E892
see page 498

SBS0470-3

Input

Operating voltage	24 ... 240 Vdc/ac, $\pm 15\%$
Rated power at 24 Vdc/ac	1 W/VA
110 Vdc/120 Vac	5 W/VA
240 Vdc/ac	10 W/VA

Output

Contact arrangement	2 changeover contacts
Max. switching voltage	30 Vdc/240 Vac
Max. switching current	10 A

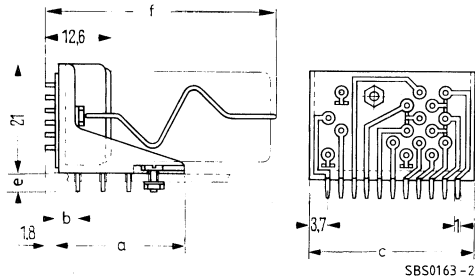
Ordering code	PU				
	Pcs/ea	PU +	100 +	500 +	1000 +
▼ POT: CNT-35-96	1				
POT: 27E892	1				

PU: Packing unit, see also page 412

Angle Sockets for Cradle Relays®

Sizes I and II

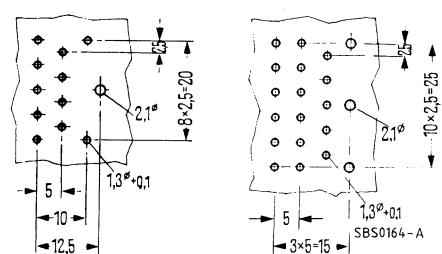
For cradle relays N, P, S and W
Printed circuit terminals
Pin arrangement for 2,5 mm grid



Dimensions	a	b	c	e
	mm	mm	mm	mm
Size I	23	6	26,8	3,4
Size II	25,5	4,3	32,4	3,2

Dimension	f
	mm
For cradle relays N, P, S	45,5
For cradle relay W	55,5

Mounting hole layout (View from the wiring side)
Size I



Angle sockets permit space-saving horizontal mounting of cradle relays.

Required mounting accessories:

1 or 2 cheese-head screws M 1,6 × 4 DIN 84, washers 1,8 DIN 433 and hexagonal nuts M 1,6 DIN 934; commercially available.

For matching hold-down springs refer to page 502.

Contact surface	Ordering code	PU	Price each			
		Pcs/ea	PU +	100 +	500 +	1000 +
Size I (without hold-down spring)						
Silver	C42334-A272-A1	6				
Size II (without hold-down spring)						
Silver	C42334-A272-A3	6				

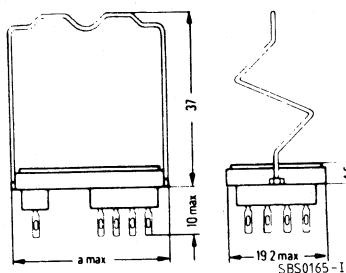
PU: Packing unit, see also page 412

Sockets and Hold-Down Springs

Sockets for cradle relays

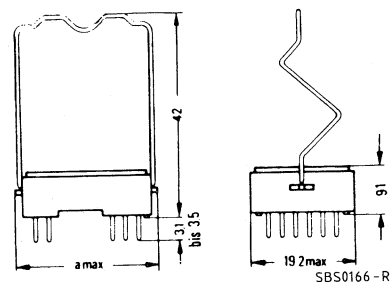
Solder terminals

with hold-down spring for cradle relays
N, S and P

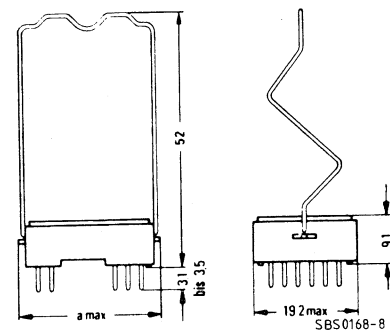
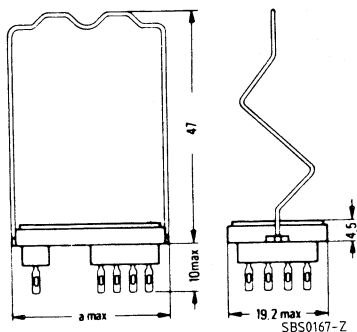


Sockets for cradle relays

Printed circuit terminals

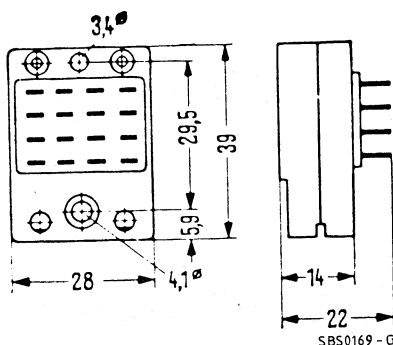


with hold-down spring for cradle relay W



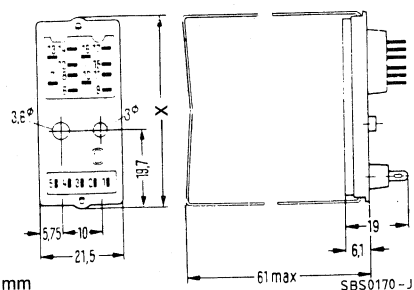
Socket	Size I	Size II	Size III
Dimension a	26,6	32,5	38

Socket for
small polarized relay



Sockets for
small general-purpose relays

	V23006-G1 ...	V23006-H1 ...
Dim. x	49	62



Dimensions in mm

Sockets and Hold-Down Springs

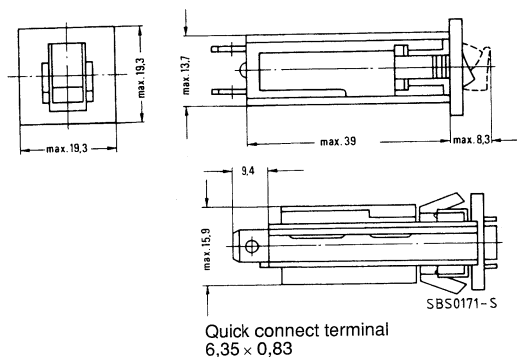
Matching	Ordering code	PU	Price each				
		Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
Sockets							
Cradle relay, size I, PC terminals	V 23154-Z1001	5					
Cradle relay, size II, PC terminals	V 23154-Z1002	5					
Cradle relay, size III, PC terminals	V 23154-Z1028	5					
Cradle relay, size II, gold-plated, PC terminals	V 23154-Z1004	5					
Cradle relay, size I, solder terminals	V 23154-Z1005	5					
Cradle relay, size II, solder terminals	V 23154-Z1006	5					
Cradle relay, size III, solder terminals	V 23154-Z1015	5					
Small gen.-purpose relay V23006-G1 ...	V 23006-Z1001	1					
Small gen.-purpose relay V23006-H1 ...	V 23006-Z1002	1					
Small polarized/small gen.-purpose relay	V 23063-Z1001	1					
Hold-down springs							
Cradle relays N, P, S, size I	V 23154-Z1021	10					
Cradle relays N, P, S, size II	V 23154-Z1022	10					
Cradle relay W, size I	V 23154-Z1023	10					
Cradle relay W, size II	V 23154-Z1024	10					
Cradle relays P, S, size III	V 23154-Z1034	10					
Small gen.-purpose relay V23006-G1 ...	V 23006-Z1003	10					
Small gen.-purpose relay V23006-H1 ...	V 23006-Z1004	10					

PU: Packing unit, see also page 412

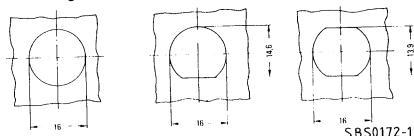
Thermal Circuit Breakers

POT: W28

For dc or ac operation
6,35 mm quick connect terminals
Approvals: UL, CSA, VDE, SEV, DEMKO
Approx. weight: 10 g



Mounting hole layout



Dimensions in mm

Trip times for rated current 3 ... 15 A rated current 0,25 ... 2 A	400 % rated current within 0,55 ... 1,8 s 400 % rated current within 1,0 ... 6,5 s
Dielectric strength Max. operating voltage	$\geq 1500 V_{rms}$ 50 Vdc, 250 Vac
Interrupt capacity	1000 A, 50 Vdc, 250 Vac
Reset time rated current 3 ... 15 A rated current 0,25 ... 2 A	max 60 s max. 180 s
Endurance cycling	1000 cycles at 200 % rated load

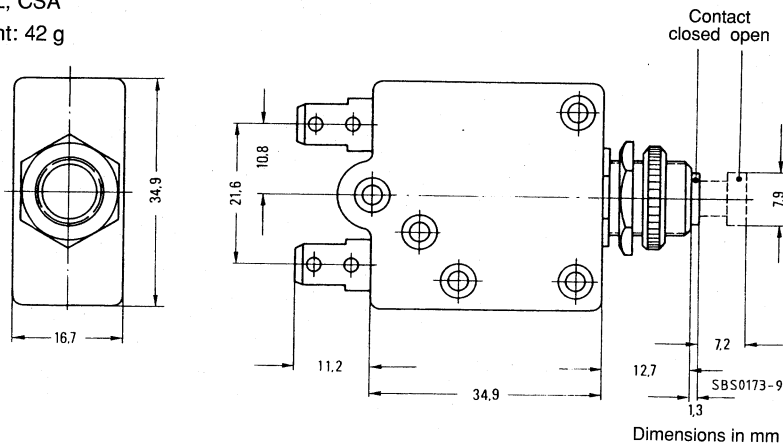
Rated current A	Typical resistance Ω	Ordering code	PU	Price each				
			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
0,25	14	POT:W28-XQ1A-0.25	25					
1	0,89	POT:W28-XQ1A-1	25					
4	0,043	POT:W28-XQ1A-4	25					
5	0,030	POT:W28-XQ1A-5	25					
8	0,017	POT:W28-XQ1A-8	25					
10	0,011	POT:W28-XQ1A-10	25					
12	0,009	POT:W28-XQ1A-12	25					
15	0,007	POT:W28-XQ1A-15	25					

PU: Packing unit, see also page 412

Thermal Circuit Breakers

POT: W58

For dc or ac operation
 6,35 mm quick connect terminals
 Approvals: UL, CSA
 Approx. weight: 42 g



Trip times for rated current 15 ... 35 A Dielectric strength Max. operating voltage Interrupt capacity Endurance cycling	400 % rated current within 1,6 ... 4,5 s ≥ 1500 V _{rms} 50 Vdc, 250 Vac 2000 A, 50 Vdc or 1000 A, 250 Vac 1000 cycles at 200 % rated load
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Rated current A	Typical resistance Ω	Ordering code	PU	Price each				
			Pcs/ea	PU +	100 +	500 +	1000 +	2000 +
15	0,010	POT:W58-XB1A4A-15	10					
20	0,006	POT:W58-XB1A4A-20	10					
25	0,005	POT:W58-XB1A4A-25	10					
30	0,004	POT:W58-XB1A4A-30	10					
35	0,004	POT:W58-XB1A4A-35	10					

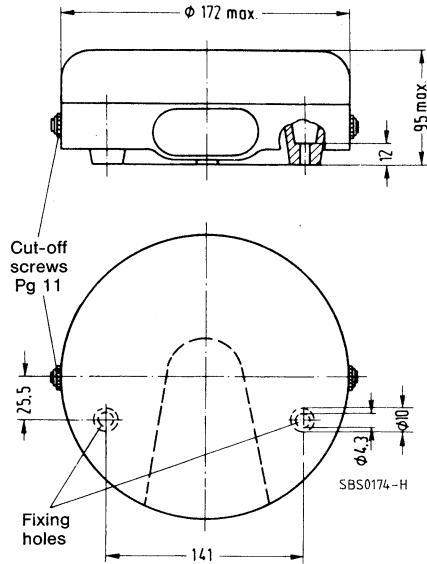
PU: Packing unit, see also page 412

Acoustic Signaling Devices

Contents	Page
Horn HF2 for outdoor applications	506
Horn HT1 for dry environments	507
High-intensity bell GF1 for outdoor applications	508
High-intensity bell GF2 for outdoor applications	509
High-intensity bell GT2 for dry environments	510

Horn HF2 for Outdoor Applications

V23302-C***
for ac operation 50/60 Hz
Vertical mounting position
Sound emission aperture
facing downwards
Approx. weight: 1,2 kg



Dimensions in mm

Cover	weather-proof, light-grey compound
Body	die cast aluminum, black-grey hammer finish
Power consumption	approx. 25 VA
Mode of operation	short-time duty (KB 15) max. 15 minutes
Sound output at 1 m distance	approx. 110 dB (A)
Protection class (DIN 40050)	IP 64
EMI/RFI suppression	class N
	approval

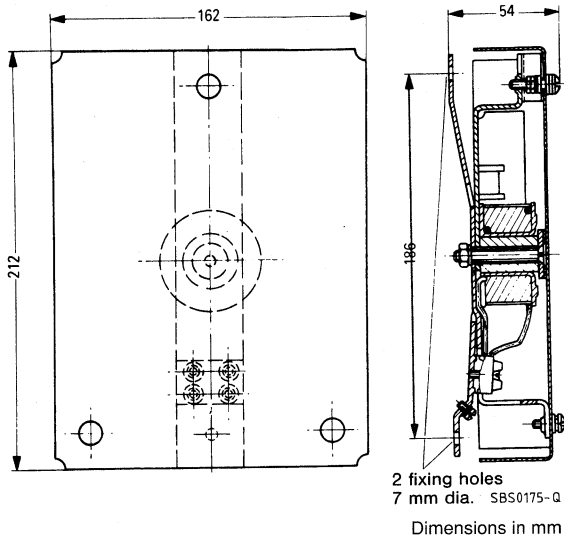


Operating voltage	Ordering code	Packing unit	Price each
Vac		Pcs/ea	
24	V23302-C4003	1	
110	V23302-C4006	1	
220	V23302-C4007	1	

Horn HT1 for Dry Environments (Low-Profile Horn)

V23302-A*
for ac operation 50/60 Hz**

Mounting position as required,
preferably in vertical position
Approx. weight: 1,4 kg



Cover

pebble grey lacquer coating

Power consumption

approx. 50 VA

Mode of operation

short-time duty (KB 5) max. 5 minutes

Sound output at 1 m distance

approx. 100 dB (A), adjustable

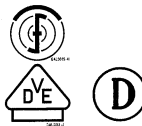
Protection class (DIN 40050)

IP 20

EMI/RFI suppression

class N

approval



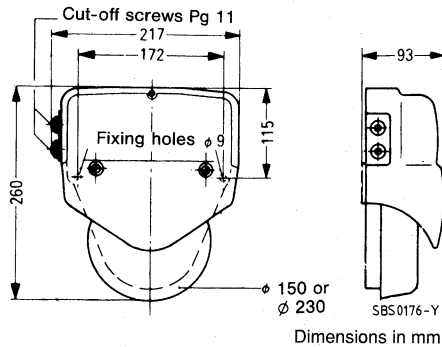
Operating voltage	Ordering code	Packing unit	Price each
Vac		Pcs/ea	
24	V23302-A2003	1	
220	V23302-A2011	1	

High-Intensity Bell GF1 for Outdoor Applications

V23301-A *** High-speed or single-stroke for dc or ac operation 50/60 Hz or ringing current 25 Hz

Mounting position as required,
preferably vertical (single-stroke
bells only vertical)

Approx. weight: 2 kg



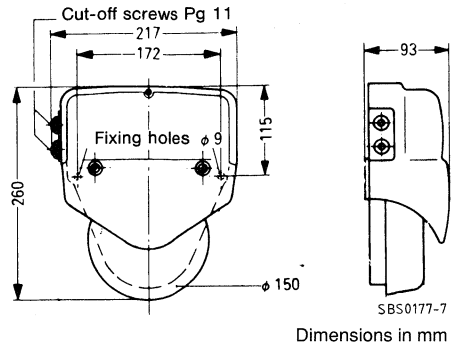
Bell	sheet steel, bright-zinc coated, yellow passivation in chromatic acid, silver-grey, metallic lacquer coating
Base plate	glass-fiber reinforced thermosetting plastic, black inking, cover with rubber-ring packing
Cover	thermosetting plastic, pebble-grey, Bunsen-burned surface
Power consumption or response power	approx. 2,5 VA or 6 VA/W approx. 0,06 VA
Sound output at 1 m distance	approx. 80 dB (A) or 100 dB (A)
EMI/RFI suppression	class N (other class upon request)

Operating voltage	Sequence of strokes/s	Ordering code	Packing unit Pcs/ea	Price each
24 Vdc	60	V23301-A3104-A24	1	
24 Vdc	Single stroke*)	V23301-B3104-F24	1	
110 Vac	60	V23301-A3102-A110	1	
220 Vac	50	V23301-A3101-A220	1	
15 ... 75 Vac (ringing current)	25	V23301-A3106-X3	1	

*) Bell $\varnothing$ 230 mm

High-Intensity Bell GF2 for Outdoor Applications

V23301-A***
High-speed ac operation
50/60 Hz
Vertical mounting position
Approx. weight: 1,5 kg



Bell	sheet steel, bright-zinc coated, yellow passivation in chromatic acid, silver-grey, metallic lacquer coating
Base plate	glass-fiber reinforced thermosetting plastic, black inking
Cover	thermosetting plastic, pebble-grey, Bunsen-burned surface
Power consumption	approx. 12 VA
Striking sequence	50 or 60 strokes/s
Sound output at 1 m distance	approx. 105 dB (A)
Protection class (DIN 40050)	IP 33
EMI/RFI suppression	class N
	approval



Operating voltage	Ordering code	Packing unit	Price each
Vac		Pcs/ea	
24	V23301-A4103-A24	1	
220	V23301-A4103-A220	1	

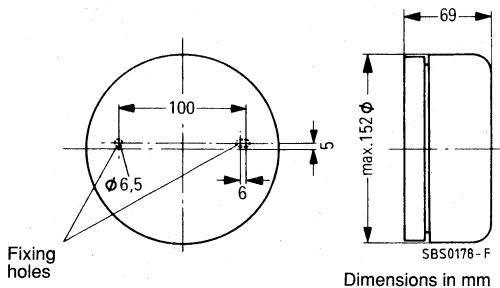
High-Intensity Bell GT2 for Dry Environments

V23301-A***

High-speed ac operation 50/60 Hz

Vertical mounting position,
striker-screw facing downwards

Approx. weight: 1,2 kg



Bell	aluminum-bronze
Base of synthetic material	black
Power consumption	approx. 12 VA
Striking sequence	50 or 60 strokes/s
Sound output at 1 m distance	approx. 105 dB (A)
Protection class (DIN 40050)	IP 30
EMI/RFI suppression	class N
	approval



Operating voltage	Ordering code	Packing unit	Price each
Vac		Pcs/ea	
24	V23301-A5103-A24	1	
220	V23301-A5103-A220	1	

Universal Spring Couplings

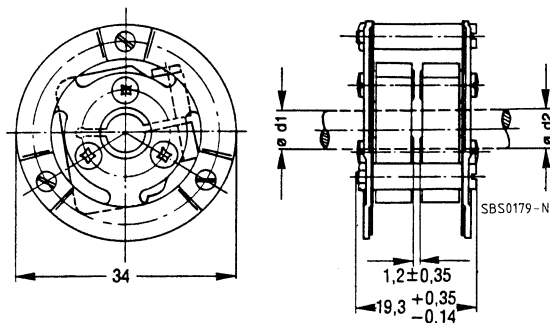
Contents	Page
Universal spring couplings	512

Universal Spring Couplings

34 mm external diameter

Permissible transmission torque:
0,45 Nm

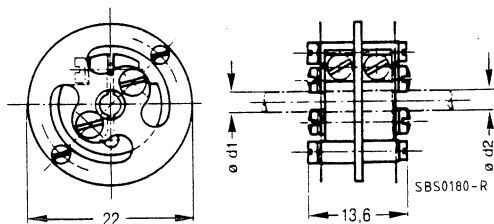
Weight: 20 g



22 mm external diameter

Permissible transmission torque:
0,1 Nm

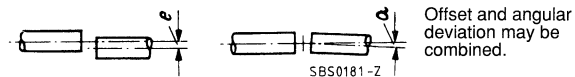
Weight: 9 g



Materials:
aluminum alloy,
stainless steel

Offset

Angular deviation $\alpha \leq 3^\circ$



Internal diameters		Offset	Ordering code	Packing unit	Price each
d1 mm	d2 mm	e mm		Pcs/ea	
34 mm external diameter					
8	8	0,4	V23422-A7	1	
6	6	0,4	V23422-A8	1	
5	5	0,4	V23422-A9	1	
8	6	0,4	V23422-A10	1	
6	5	0,4	V23422-A12	1	
22 mm external diameter					
3,05	3	0,3	V23422-A13	1	

Connectors, Switches and Pushbuttons

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Connectors

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Note: In this chapter packing units (PU) are quoted in addition to the relevant ordering codes. Ordering the quantities specified as packing units has the following advantages:

- You receive original packings from the manufacturing plants.
- All products contained in a packing unit stem from one production lot.
- Mistakes or damage which may arise from transferring the products from original packing to delivery packing are excluded.

For these reasons we recommend to order the minimum quantity of one packing unit.

The contact surfaces of many products are plated with noble metals. A surcharge, depending on the noble metal quotation of the day, may therefore be added to the stated prices.

▼ Newly included in this edition

PC 612 design B, C and M with press-in terminals
 SIEDECON connectors, full and half length, with matching adapter system KIT
 Extended range of coaxial connectors and subminiature angle connectors

Further technical literature

Data Book "Plug Connectors", A23999-A310-A971-★-7604
 Data Book "RF Connectors", A23999-A521-A996-★-7604

Connectors PC 612

Technical Data

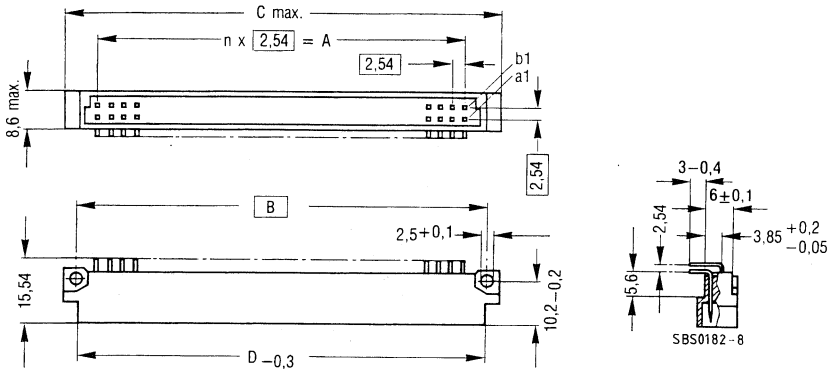
Blade-contact and female connectors

Electrical and mechanical ratings (short form)

Designs in accordance with DIN 41612	B B/2 B/3	C C/2 C/3	M M/2 M/3	Q Q/2 Q/3	R R/2 R/3	D	F, G	SIEDECON
Performance levels in acc. with DIN 41612	2,3	2,3	1,2	2,3	2,3	2,3	1,2,3	2
Temperature range	- 55 °C ... + 125 °C							
Current rating at 70 °C	1 A					4 A	5,5 A or 1,7 A	
Dielectric strength	1000 V					1550 V	1000 V	
Creepage distance contact/contact	1,2 mm					3 mm	1,2 mm	
Clearance contact/contact	1,2 mm					1,6 mm	1,2 mm	
Contact resistance	≤ 20 mΩ					≤ 15 mΩ	≤ 20 mΩ	
Insulation resistance	≥ 10 ⁶ MΩ							
Terminals for soldering into PCBs wire-wrap connection press-in connection	× × ×		× ×	×		×	×	×
Insulating material	Glass-fiber reinforced thermoplastic material							
Contact surface	Au on Pd on Ni		Au on Ni or Au on Pd on Ni	Au on Pd on Ni		Au on Ni	Au on Pd on Ni	Au on Pd on Ni
Insertion/ removal cycles Ind. cli- mate test	Perform. level 1	≥ 500 insertion/removal cycles and industrial climate in acc. with DIN 41612, part 5						
	Perform. level 2	≥ 400 insertion/removal cycles and industrial climate in acc. with DIN 41612, part 5						
	Perform. level 3	≥ 400 insertion/removal cycles (≥ 50 insertion/removal cycles)						
High-current and coaxial contacts	—		yes	—			yes	
Approvals	UL listed: File E 92320, Project 84 ME 9787 CECC 75101-801						DBP FTZ Darmstadt	

Blade-contact connectors in acc. with DIN 41612, design B (double-row dielectric) With angled solder pins

2,54 mm center spacing



Design	n	Dimensions in mm							
		Blade-contact connector				Female connector			
		A	B	C	D	A	B	C	E
1/1	31	78,74	88,9	94	89	78,74	90	95	85
1/2	15	38,1	48,26	53,36	48,36	38,1	50	55	44,36
1/3	9	22,86	33,02	38,12	33,12	22,86	34,76	39,76	29,12

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Design B
with angled solder pins $l = 3 - 0,4$ mm

32	a	3	V42254-B1300-B641	40				
64	a b	2	V42254-B1200-B640	40				
64	a b	3	V42254-B1300-B640	40				

Design B/2

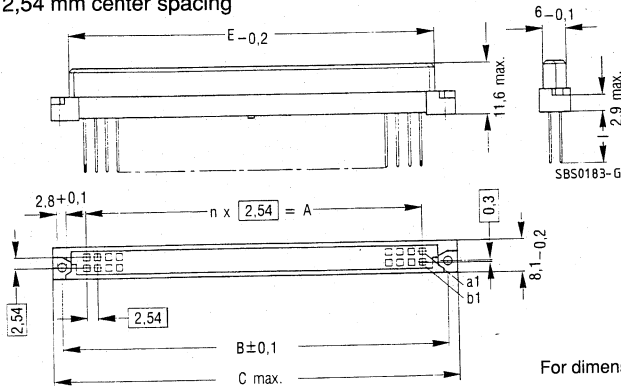
32	a b	3	V42254-B1300-B320	60				
----	-----	---	-------------------	----	--	--	--	--

Design B/3

20	a b	3	V42254-B1300-B200	80				
----	-----	---	-------------------	----	--	--	--	--

Female connectors in acc. with DIN 41612, design B (double-row dielectric)
With wire-wrap pins (diagonal 0,79 ... 0,86 mm) or
with straight solder pins (suitable for holes with $\varnothing 1 \text{ mm} \pm 0,1$) or
with press-in terminals

2,54 mm center spacing



For dimensions see page 518

No. of contacts	Equipped contact rows	Perfor- mance level	Ordering code	PU	Price each			
				Pcs/ea	1 +	100 +	500 +	

Design B
with wire-wrap pins $l = 13 + 0,5 \text{ mm}$

64	a b	2	V42254-B2240-B640	20				
64	a b	3	V42254-B2340-B640	20				

with solder pins $l = 4,5 \pm 0,3 \text{ mm}$

32	a	3	V42254-B2302-B641	40				
64	a b	2	V42254-B2202-B640	40				
64	a b	3	V42254-B2302-B640	40				

with press-in terminals $l = 4 + 0,5 \text{ mm}$

▼ 64	a b	2	V42254-B2263-B640	40				
------	-----	---	-------------------	----	--	--	--	--

Design B/2
with solder pins $l = 4,5 \pm 0,3 \text{ mm}$

32	a b	3	V42254-B2302-B320	60				
----	-----	---	-------------------	----	--	--	--	--

with press-in terminals $l = 4 + 0,5 \text{ mm}$

▼ 32	a b	2	V42254-B2263-B320	60				
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Design B/3
with solder pins $l = 4,5 \pm 0,3 \text{ mm}$

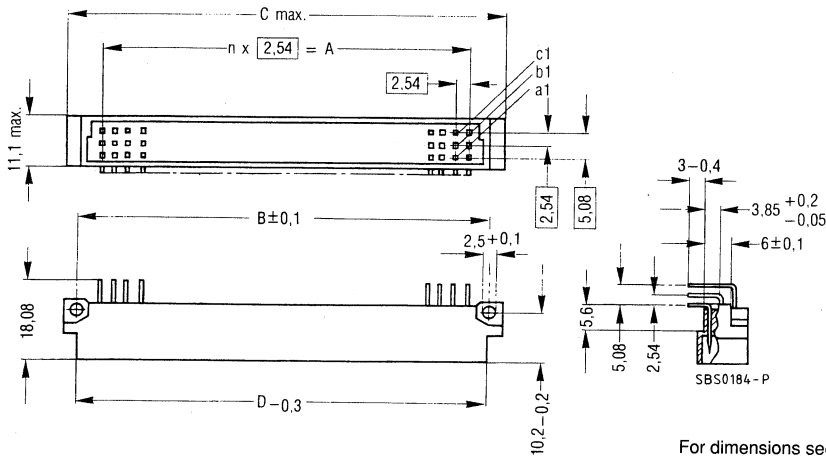
20	a b	3	V42254-B2302-B200	80				
----	-----	---	-------------------	----	--	--	--	--

with press-in terminals $l = 4 + 0,5 \text{ mm}$

▼ 20	a b	2	V42254-B2263-B200	80				
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Blade-contact connectors in acc. with DIN 41612, design C (triple-row dielectric) With angled solder pins

2,54 mm center spacing



For dimensions see page 518

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Design C with angled solder pins $l = 3 - 0,4$ mm

32 ¹⁾	a c	3	V42254-B1300-C968	40				
64	a c	2	V42254-B1200-C963	40				
64	a c	3	V42254-B1300-C963	40				
96	a b c	2	V42254-B1200-C960	40				
96	a b c	3	V42254-B1300-C960	40				

Design C/2

48	a b c	3	V42254-B1300-C480	60				
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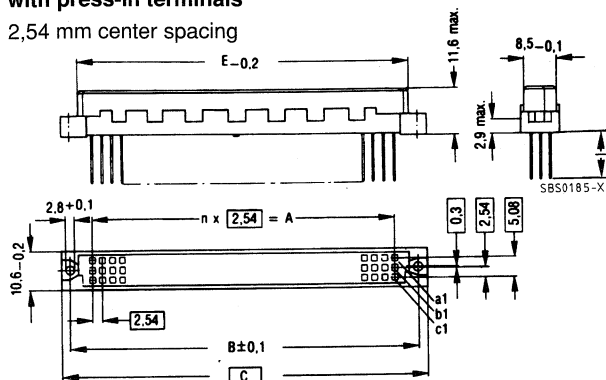
Design C/3

30	a b c	3	V42254-B1300-C300	80				
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¹⁾ 5,08 mm center spacing in longitudinal direction, all even positions

Female connectors in acc. with DIN 41612, design C (triple-row dielectric)
With straight solder pins (suitable for holes with $\varnothing 1 \text{ mm} \pm 0,1$) or
with press-in terminals

2,54 mm center spacing



For dimensions see page 518

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Design C with solder pins $l = 2,9 \pm 0,3$ mm

64	a c	2	V42254-B2201-C963	40				
64	a c	3	V42254-B2301-C963	40				
96	a b c	2	V42254-B2201-C960	40				
96	a b c	3	V42254-B2301-C960	40				

with solder pins $l = 4,5 \pm 0,3$ mm

32 ¹⁾	a c	3	V42254-B2302-C968	40					
64	a c	2	V42254-B2202-C963	40					
64	a c	3	V42254-B2302-C963	40					
96	a b c	2	V42254-B2202-C960	40					
96	a b c	3	V42254-B2302-C960	40					

with press-in terminals $l = 4 + 0,5 \text{ mm}$

▼ 64	a c	2	V42254-B2263-C960	40					
▼ 96	a b c	2	V42254-B2263-C963	40					

Design C/2 with solder pins $l = 4,5 \pm 0,3$ mm

48	abc	3	V42254-B2302-C480	60				
----	-----	---	-------------------	----	--	--	--	--

with press-in terminals $l = 4 + 0,5 \text{ mm}$

▼ 48	a b c	2	V42254-B2263-C480	60					
------	-------	---	-------------------	----	--	--	--	--	--

Design C/3 with solder pins $l = 4,5 \pm 0,3$ mm

30	a b c	3	V42254-B2302-C300	80					
----	-------	---	-------------------	----	--	--	--	--	--

with press-in terminals $l = 4 + 0,5 \text{ mm}$

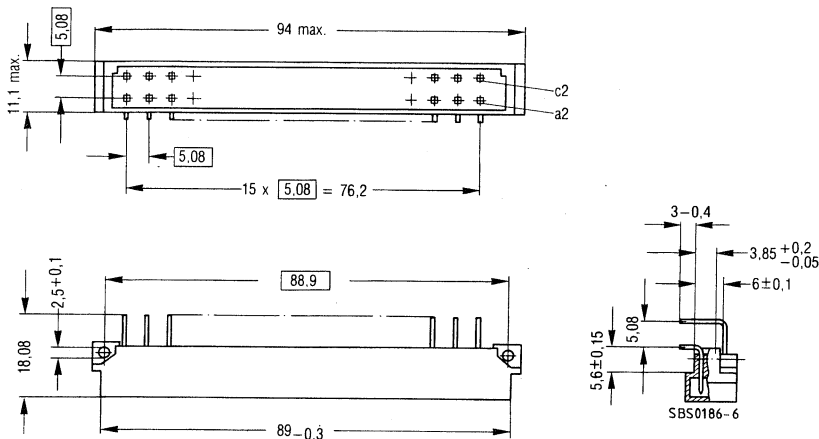
▼ 30	a b c	2	V42254-B2263-C300	80					
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1) 5.08 mm center spacing in longitudinal direction, all even positions

Blade-contact connectors in acc. with DIN 41612, design D (triple-row dielectric) With angled solder pins

For high voltages and high currents, e.g. for power supply units

5,08 mm center spacing



Dimensions in mm

No. of con- tacts	Equipped contact rows	Performance level	Ordering code	PU	Price each				
				Pcs/ea	1 +	100 +	500 +		
With angled solder pins l = 3 – 0,4 mm									
32	a c	2	V42254-B1500-D325	40					
32	a c	3	V42254-B1300-D325	40					

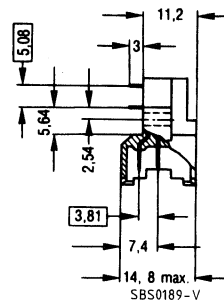
Connectors PC 612

Blade-contact connectors in acc. with DIN 41612, design F

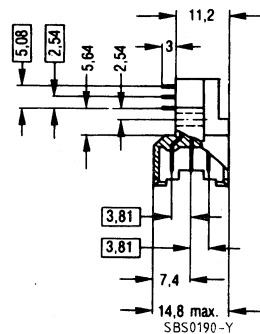
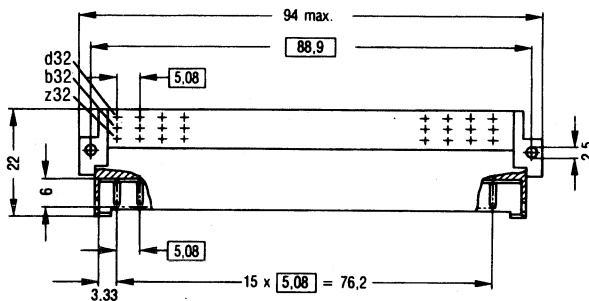
With angled solder pins

2,54 mm center spacing
(5,08 mm in longitudinal direction)

32 contacts



48 contacts



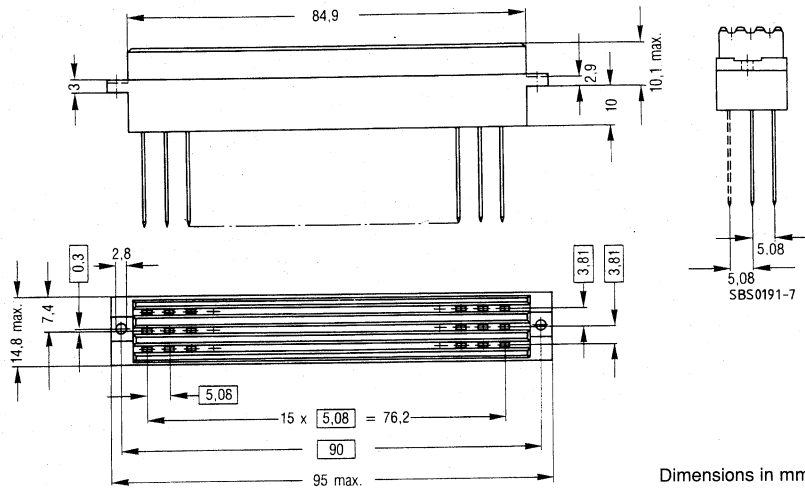
Dimensions in mm

Note: Row z is flux-tight

No. of contacts	Equip- ped contact rows	Position of pre- mating contact blades	Perfor- mance level	Ordering code	PU	Price each				
						Pcs/ea	1 +	50 +	100 +	500 +
With solder pins l = 3 – 0,4 mm										
32	z b	z2, b2, b32	1	V23533-B1100-F407	10					
32	z b		2	V23533-B1200-F407	10					
48	z b d		1	V23533-B1100-F405	10					
48	z b d		2	V23533-B1200-F405	10					
48	z b d		3	V23533-B1300-F405	10					
48	z b d		1	V23533-B1100-F425	10					

Female connectors in acc. with DIN 41612, design F With wire-wrap pins (1 mm × 1 mm)

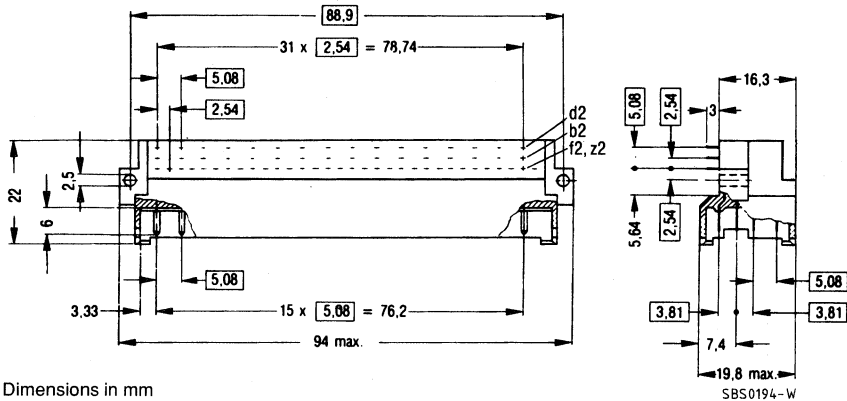
5,08 mm center spacing



No. of contacts	Equipped contact rows	Performance level	Ordering code	PU	Price each				
				Pcs/ea	1 +	50 +	100 +	500 +	
With wire-wrap pins l = 22 ± 0,3 mm									
32	z b	1	V23533-B2151-F407	10					
32	z b	2	V23533-B2251-F407	10					
48	z b d	1	V23533-B2151-F405	10					
48	z b d	2	V23533-B2251-F405	10					
48	z b d	3	V23533-B2351-F405	10					

Blade-contact connectors in acc. with DIN 41612, design G With angled solder pins

2,54 mm center spacing
(pin assignment: row f in row z)



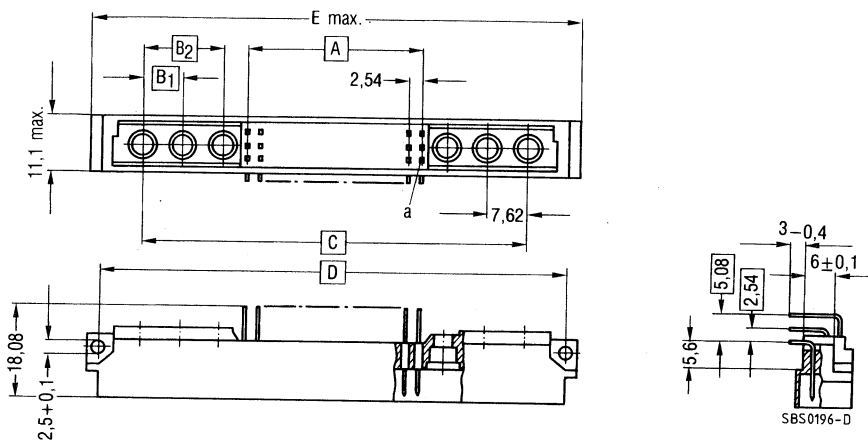
Dimensions in mm

No. of contacts	Performance level	Ordering code	PU Pcs/ea	Price each			
				1 +	50 +	100 +	500 +
With solder pins l = 3 – 0,4 mm							
64	1	V23533-B1100-G605	8				
64	2	V23533-B1200-G605	8				

Blade-contact connectors in acc. with DIN 41612, design M (triple-row dielectric) With angled solder pins

For **special contacts SK** refer to page 531

2,54 mm center spacing



For dimensions see next page

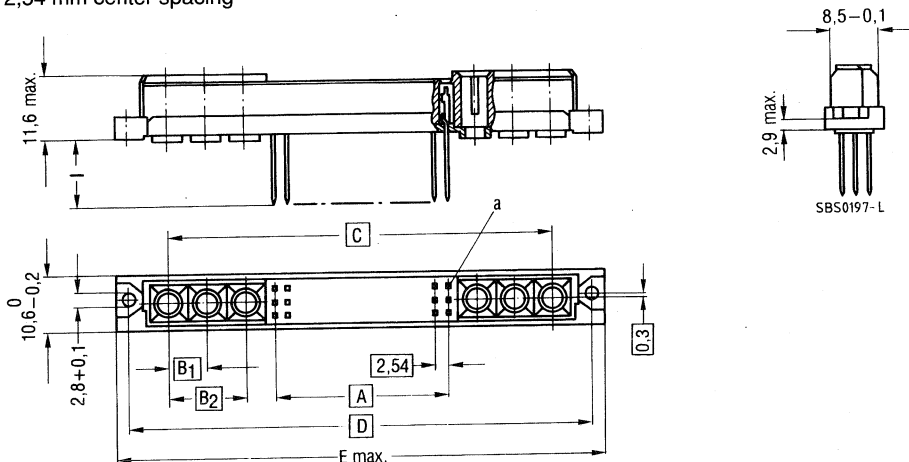
No. of contacts	Equipped contact rows	Performance level	Ordering code	PU	Price each				
				Pcs/ea	1 +	100 +	500 +		
Design M with angled solder pins l = 3 – 0,4 mm									
78+2SK	a b c	2	V42254-B1200-M780	40					
42+6SK	a b c	1	V42254-B1400-M420	40					
42+6SK	a b c	2	V42254-B1500-M420	40					
42+6SK	a b c	2	V42254-B1200-M420	40					
24+8SK	a b c	2	V42254-B1200-M240	40					
Design M/2									
30+2SK	a b c	2	V42254-B1200-M300	60					

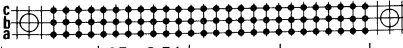
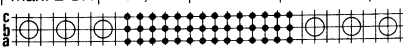
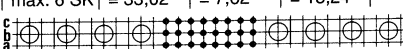
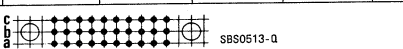
Connectors PC 612

Female connectors in acc. with DIN 41612, design M (triple-row dielectric)
With straight solder pins (suitable for holes with $\varnothing 1 \text{ mm} \pm 0,1$) or
with press-in terminals

For **special contacts SK** refer to page 531

2,54 mm center spacing



Version	No. of contacts	Dimensions in mm					Blade-contact connector		Female connector	
		A	B ₁	B ₂	B ₃ *	C	D	E	D	E
Design M		SBS0479-7								
	78+ max. 2 SK	25 × 2,54 = 63,5	—	—	—	73,66	88,9	94	90	95
		SBS0512-H								
	42+ max. 6 SK	13 × 2,54 = 33,02	3 × 2,54 = 7,62	6 × 2,54 = 15,24	—	73,66	88,9	94	90	95
		SBS0480-A								
	24+ max. 8 SK	7 × 2,54 = 17,78	3 × 2,54 = 7,62	6 × 2,54 = 15,24	9 × 2,54 = 22,86	73,66	88,9	94	90	95
	Design M/2		SBS0513-a							
30+ max. 2 SK		9 × 2,54 = 22,86	—	—	—	33,02	48,26	53,36	55	50

*) Not shown in outline drawing

Connectors PC 612

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU	Price each					
				Pcs/ea	1 +	100 +	500 +			

Design M

with solder pins $l = 4,5 \pm 0,3$ mm

78+2SK	a b c	2	V42254-B2202-M780	40						
42+6SK	a b c	2	V42254-B2502-M420	40						
42+6SK	a b c	2	V42254-B2202-M420	40						
24+8SK	a b c	2	V42254-B2202-M240	40						

with press-in terminals $l = 4 + 0,5$ mm

▼ 42+6SK	a b c	2	V42254-B2263-M420	40						
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Design M/2

with solder pins $l = 4,5 \pm 0,3$ mm

30+2SK	a b c	2	V42254-B2202-M300	60						
--------	-------	---	-------------------	----	--	--	--	--	--	--

with press-in terminals $l = 4 + 0,5$ mm

▼ 30+2SK	a b c	2	V42254-B2263-M300	60						
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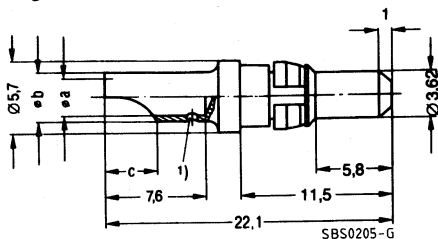
Connectors PC 612 Accessories

Special contacts (SK) for blade-contact and female connectors of design M

Material: contact surface: nickel and hard gold

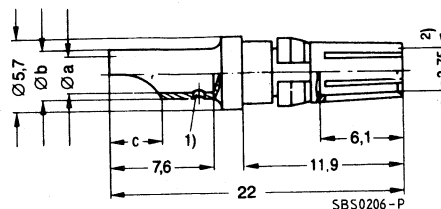
High-current connector for blade-contact connectors

Plug for cable connection



for female connectors

Socket for cable connection



Rated current	Dimensions in mm		
	a Ø	b Ø	c
40 A	4,7	5,7	5
10 A	1,6	2,7	3

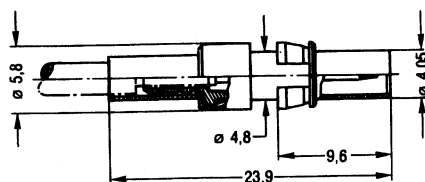
1) Only at 10 A rated current

2) Initial dimension

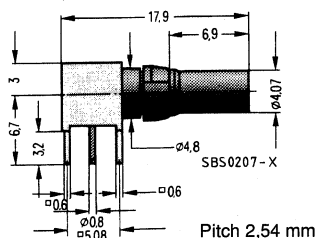
Item	Rated current	Ordering code	PU Pcs/ea	Price each			
				1 +	100 +	500 +	
Plug	40 A	C42334-A347-A91	10				
	10 A	C42334-A347-A93	10				
Socket	40 A	C42334-A347-A94	10				
	10 A	C42334-A347-A96	10				

Coaxial connectors of series 1,0/2,3 (50 Ω and 75 Ω), "snap-in" in acc. with DIN 41626, part 2, for blade-contact connectors

Outline drawing 1 Bulkhead jack with cable connection (50 Ω and 75 Ω), design B (inner conductor can be soldered on separately)

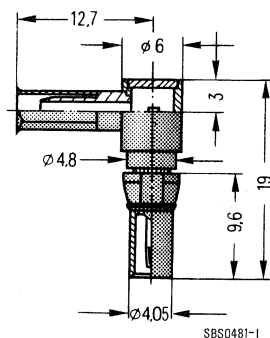


Outline drawing 2 Bulkhead angle plug 90° with PC board connection (50 Ω)



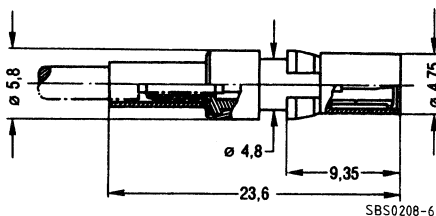
Connectors PC 612 Accessories

Outline drawing 3 Bulkhead jack with angle cable connection 90° (50 Ω)

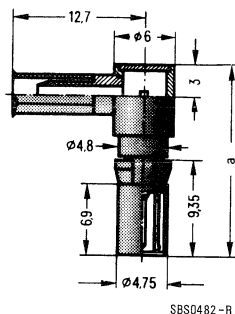


Coaxial connectors of series 1,0/2,3 (50 Ω and 75 Ω), "snap-in" in acc. with DIN 41626 for female connectors

Outline drawing 4 Bulkhead plug with cable connection (50 Ω und 75 Ω), design B (inner conductor can be soldered on separately)



Outline drawing 5 Bulkhead plug with angle cable connection 90° (50 Ω and 75 Ω)



Ordering code	Dim. a (mm)
V23601-A502-E71	18,7
V23601-A556-E73	22,3
V23615-A502-E57	18,7

Out-line drawing	Cable Ø (mm)	Type of cable	Ordering code	PU	Price each				
					Pcs/ea	1 +	100 +	500 +	
1	2,6	RG 316/U (50 Ω)	V23601-B602-E71*)	1					
▼ 1	2,67	RG 179 (75 Ω)	V23615-B602-E57	1					
2	2,67	RG 179	V23601-A1227-E1	1					
▼ 3	2,6	RG 316/U (50 Ω)	V23601-A802-E71	1					
	2,67	RG 179 (75 Ω)							
4	2,6	RG 316/U (50 Ω)	V23601-B302-E71*)	1					
▼ 4	2,67	RG 179 (75 Ω)	V23615-B302-E57	1					
5	2,672, 6	RG 179 (75 Ω)	V23601-A502-E71*)	1					
	2,67	RG 316/U (50 Ω)							
▼ 5	3,2	RG 179 (75 Ω)	V23601-A556-E73	1					
	3,0	KO2252 d (50 Ω)							
▼ 5	2,67	RD 316/U (50 Ω)	V23615-A502-E57	1					
		RG 179 (75 Ω)							

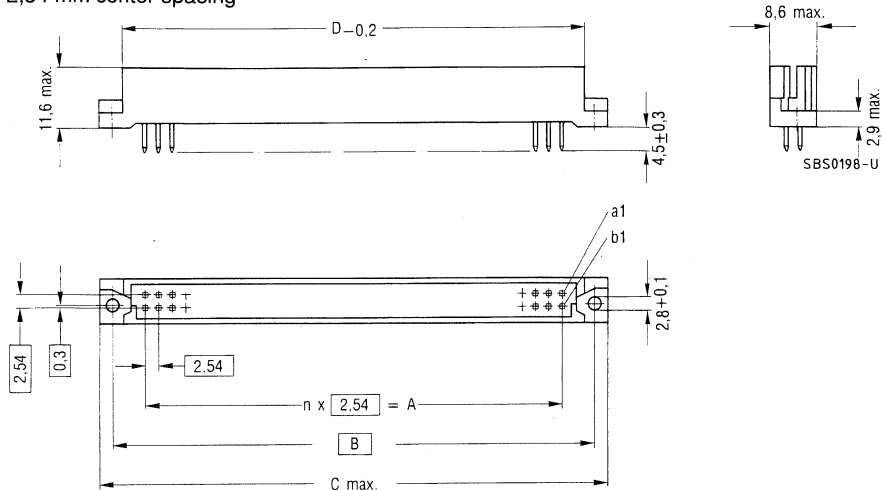
*) Also suitable for SIEDECON

Blade-contact connectors in acc. with DIN 41612, design Q (double-row dielectric)

Inverted version of design B

With straight solder pins

2,54 mm center spacing



Design	n	Dimensions in mm			
		A	B	C	D
Q	31	78,74	90	95	88
Q/2	15	38,1	50	55	47,6
Q/3	9	22,86	34,76	39,76	32,12

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Design Q

with solder pins $l = 4,5 \pm 0,3$ mm

64	a b	3	V42254-B1302-Q640	40				
----	-----	---	-------------------	----	--	--	--	--

Design Q/2

32	a b	3	V42254-B1302-Q320	60				
----	-----	---	-------------------	----	--	--	--	--

Design Q/3

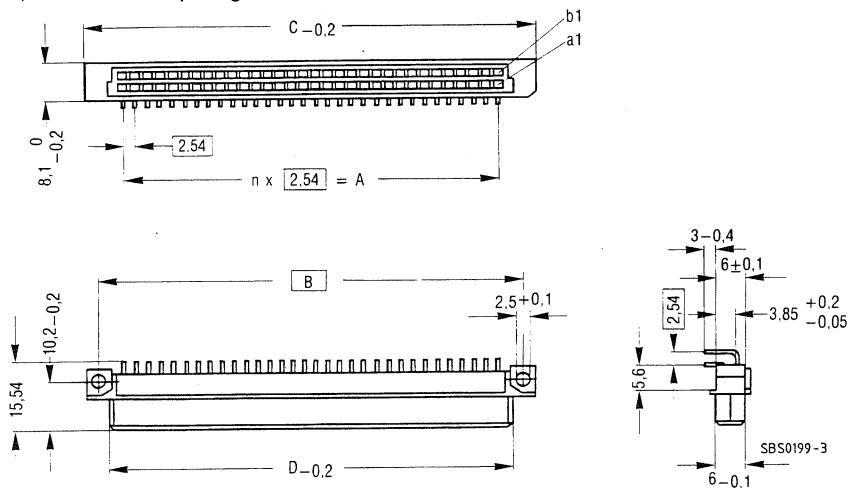
20	a b	3	V42254-B1302-Q200	80				
----	-----	---	-------------------	----	--	--	--	--

Female connectors in acc. with DIN 41612, design Q (double-row dielectric)

Inverted version of design B

With angled solder pins

2,54 mm center spacing



De- sign	n	Dimensions in mm			
		A	B	C	D
Q	31	78,74	88,9	94	85
Q/2	15	38,1	48,26	53,36	44,4
Q/3	9	22,86	33,02	38,12	29,12

No. of con- tacts	Equipped contact rows	Perfor- mance level	Ordering code	PU Pcs/ea	Price each				
					1 +	100 +	500 +		

Design Q
with angled solder pins $l = 3 - 0,4$ mm

64	a b	3	V42254-B2300-Q640	40					
----	-----	---	-------------------	----	--	--	--	--	--

Design Q/2

32	a b	3	V42254-B2300-Q320	60					
----	-----	---	-------------------	----	--	--	--	--	--

Design Q/3

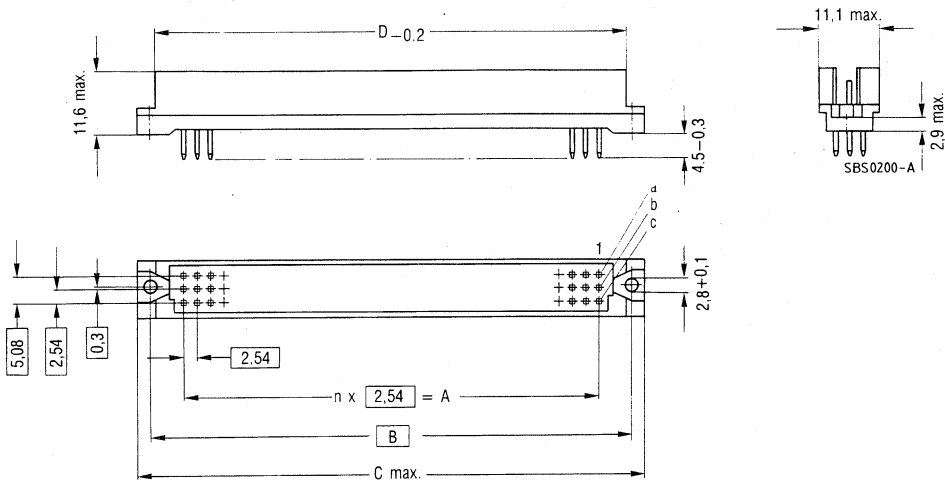
20	a b	3	V42254-B2300-Q200	80					
----	-----	---	-------------------	----	--	--	--	--	--

Blade-contact connectors in acc. with DIN 41612, design R (triple-row dielectric)

Inverted version of design C

With straight solder pins

2,54 mm center spacing



De- sign	n	Dimensions in mm			
		A	B	C	D
R	31	78,74	90	95	88
R/2	15	38,1	50	55	47,6
R/3	9	22,86	34,76	39,76	32,12

No. of contacts	Equipped contact rows	Perfor- mance level	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Design R

with solder pins $l = 4,5 \pm 0,3$ mm

64	a c	2	V42254-B1202-R963	40				
64	a c	3	V42254-B1302-R963	40				
96	a b c	2	V42254-B1202-R960	40				
96	a b c	3	V42254-B1302-R960	40				

Design R/2

48	a b c	3	V42254-B1302-R480	60				
----	-------	---	-------------------	----	--	--	--	--

Design R/3

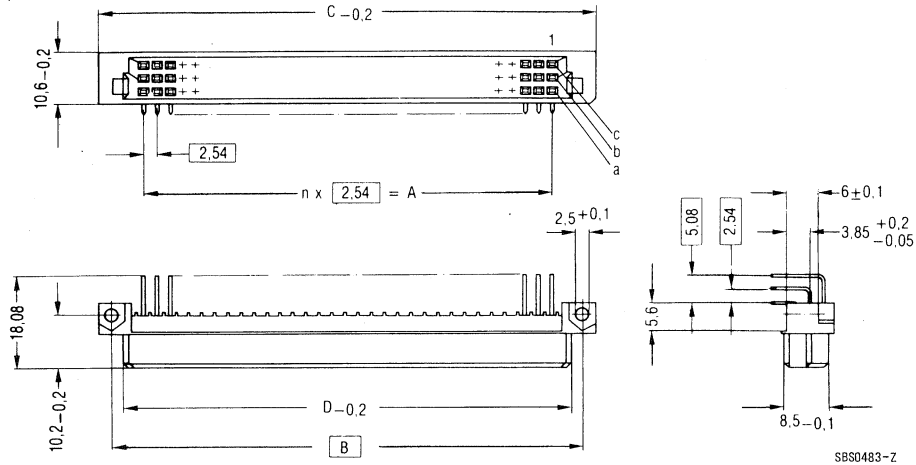
30	a b c	3	V42254-B1302-R300	80				
----	-------	---	-------------------	----	--	--	--	--

Female connectors in acc. with DIN 41612, design R (triple-row dielectric)

Inverted version of design C

With angled solder pins

2,54 mm center spacing



De- sign	n	Dimensions in mm			
		A	B	C	D
R	31	78,74	88,9	94	85
R/2	15	38,1	48,26	53,36	44,4
R/3	9	22,86	33,02	38,12	29,12

No. of con- tacts	Equipped contact rows	Perfor- mance level	Ordering code	PU Pcs/ea	Price each				
					1 +	100 +	500 +		

Design R
with angled solder pins $l = 3 - 0,4$ mm

64	a c	2	V42254-B2200-R963	40					
64	a c	3	V42254-B2300-R963	40					
96	a b c	2	V42254-B2200-R960	40					
96	a b c	3	V42254-B2300-R960	40					

Design R/2

48	a b c	3	V42254-B2300-R480	60					
----	-------	---	-------------------	----	--	--	--	--	--

Design R/3

30	a b c	3	V42254-B2300-R300	80					
----	-------	---	-------------------	----	--	--	--	--	--

Connectors PC 612

Accessories

Housings for blade-contact and female connectors

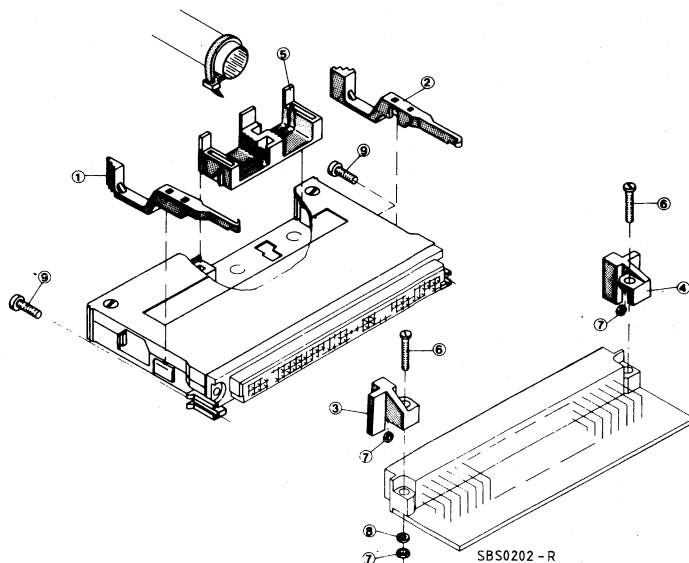
- For installation of female connectors in design C, D, M, and blade-contact connectors in design R
- Two cable inlets max. $\varnothing$ 11 mm
- Pull-relief facility incorporating cable strip at each cable inlet

Material

- Polycarbonate, glass-fiber reinforced, pebble grey RAL 7032

Ambient temperature range – 55 °C ... + 100 °C

- ⑥ 2 machine screws
M 2,5 × 12 DIN 84
- ⑦ 4 hexagon nuts
M 2,5 DIN 439
- ⑧ 2 washers 2,7 DIN 433
- ⑨ 2 machine screws
M 2,5 × 16 DIN 84



Housing (set of parts, not fitted)

To be used with	Ordering code	PU Pcs/ea	Price each
Female connectors, design C, D, M or blade-contact connectors, design R	C42334-Z61-C2	10	

Accessories

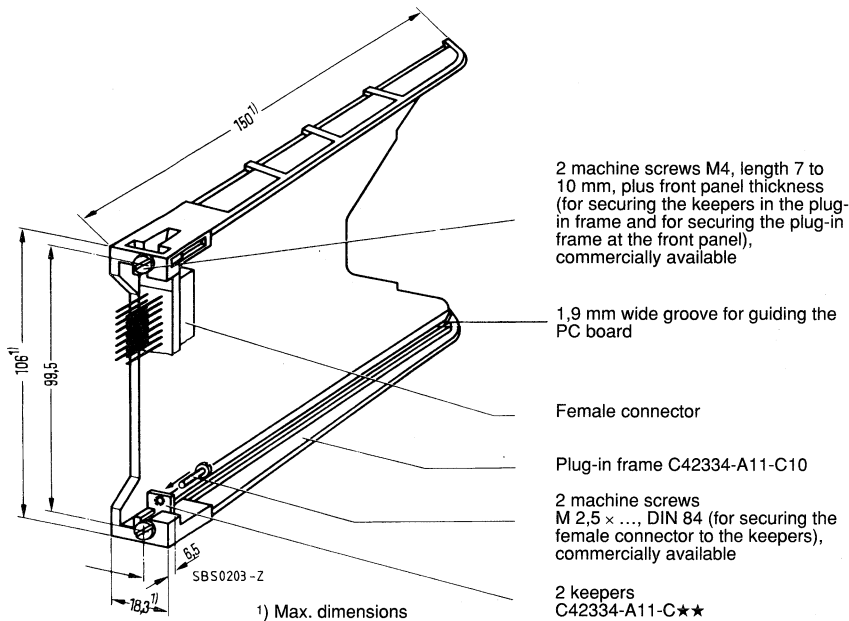
Item		Ordering code	PU Pcs/ea	Price each
1	Locking lever, left	C42334-Z61-C11	10	
2	Locking lever, right	C42334-Z61-C12	10	
3	Latching element, left	C42334-Z61-C14	10	
4	Latching element, right	C42334-Z61-C15	10	
5	Circular section cable insert	C42334-Z61-C16	10	

Required screws, washers and nuts are commercially available.

Connectors PC 612 Accessories

Plug-in frame, vacant

for PC boards 100 mm in width (European format 160 × 100 × 1,6 mm)



Material: thermoplastic material (RAL 7032), glass-fiber reinforced

For customer fitting with

- Connectors as per DIN 41612: blade-contact connectors, design Q and R, and female connectors, design B, C, D, M, F and G (see pages 518 ff.)
- Connectors as per DIN 41617: female connectors (see pages 576 ff.)

Item	Ordering code	PU	Price each		
		Pcs/ea	1 +	100 +	500 +
Plug-in frame, vacant	C42334-A11-C10	5			
Keeper for connectors as per DIN 41617	C42334-A11-C11 ¹⁾	20			
Keeper for connectors as per DIN 41612	C42334-A11-C12 ¹⁾	20			

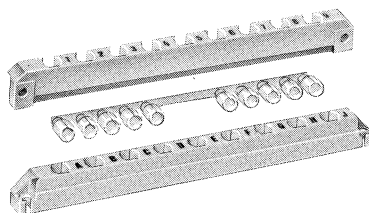
¹⁾ 2 pieces per frame required

Connectors PC 612 Accessories

Loose polarization for all types

Material: thermoplastic material,
glass-fiber reinforced

Max.126 polarizing combinations are possible



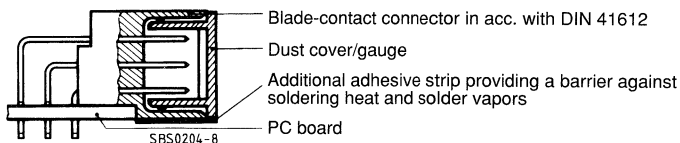
Polarizing strip C42334-A349-C2
to be fixed on the blade-contact
connector (PC board)

Polarizing stud C42334-A349-C3

Polarizing strip C42334-A349-C1/-C11
to be fixed adjacent to the female
connector (in equipment)

Item	Ordering code	PU Pcs/ea	Price each			
			1 +	50 +	100 +	500 +
Polarizing strip (for screws M2)	C42334-A349-C1	10				
Polarizing strip	C42334-A349-C2	10				
Polarizing stud (10 integrally molded studs)	C42334-A349-C3	10				
Polarizing strip (for screws M2,5)	C42334-A349-C11	10				

Dust cover/gauge



For blade-contact connectors in acc. with DIN 41612, design C, D und M. The cover/gauge is fixed into position by being clamped in or at the protective collar of the blade-contact connectors and protects the blades without touching them.

Item	Ordering code	PU Pcs/ea	Price each			
			1 +	50 +	100 +	500 +
Dust cover/gauge for 3-row blade-contact connectors	C42334-A387-C890	10				

Blade-contact connectors

Design based on DIN 41612

(4-row dielectric)

With press-in pins

With 6 special contacts

(4 special contacts when adapter system is used)

With premating LF contacts

(a1 ... d1, a85 ... d85)

Compatible with DIN types

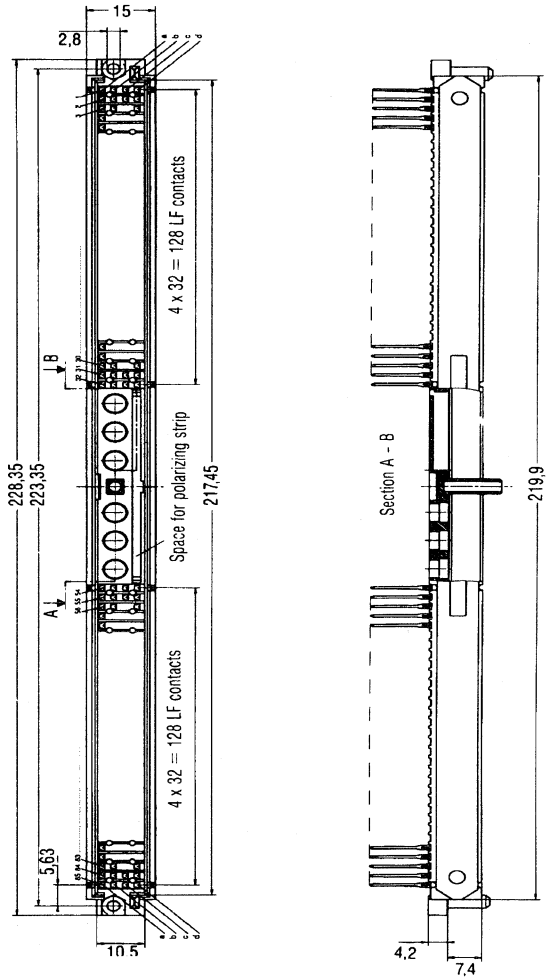
Contact overlap $\geq 2,8$ mm

Packing density: 15,24 mm

(≥ 3 modular spacings)

2,54 mm center spacing

For high-current and coaxial contacts refer to PC 612, design M



For electr. and mechanical ratings see page 517

SBS0484-E
Dimensions in mm

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU	Price each				
				Pcs/ea	1 +	50 +	100 +	500 +	
With press-in pins, 13 mm									
▼ 128	a c	2	V23532-A1818-A260	10					
With press-in pins, 4 mm									
▼ 192	a b c	2	V23532-A1717-A263	10					

Female connectors

Design based on DIN 41612
(4-row dielectric)

With solder pins angled at 90°
3 mm

With 6 special contacts

(4 special contacts when
adapter system is used)

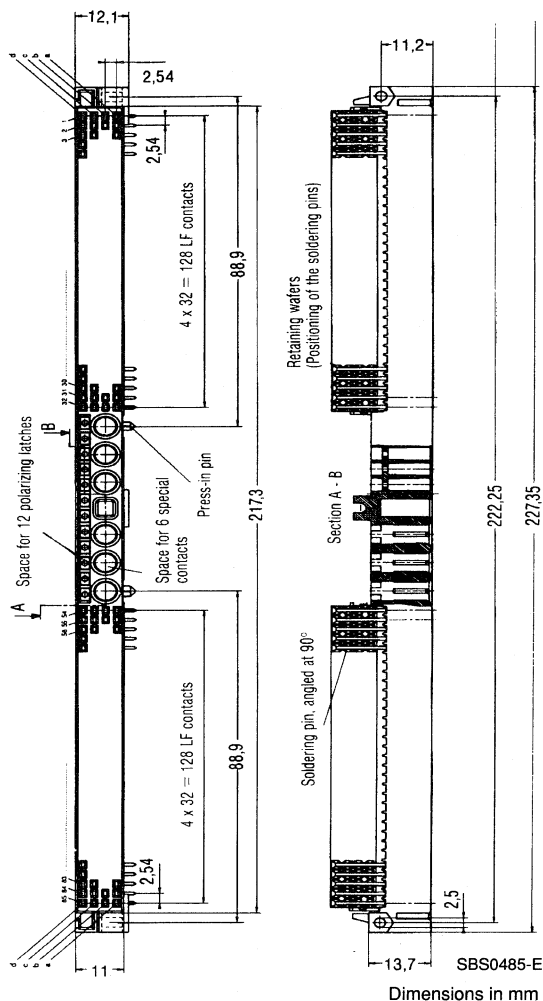
Compatible with DIN types

Packing density: 15,24 mm

(≥ 3 modular spacings)

2,54 mm center spacing

For high-current and coaxial
contacts refer to PC 612,
design M



Dimensions in mm

No. of contacts	Equipped contact rows	Perfor- mance level	Ordering code	PU Pcs/ea	Price each			
					1 +	50 +	100 +	500 +
▼ 128	a c	2	V23532-A1818-B200	10				
▼ 192	a b c	2	V23532-A1717-B200	10				

Blade-contact connector, 1/2 length

Design based on DIN 41612 (4-row dielectric)

With press-in pins, 4 mm

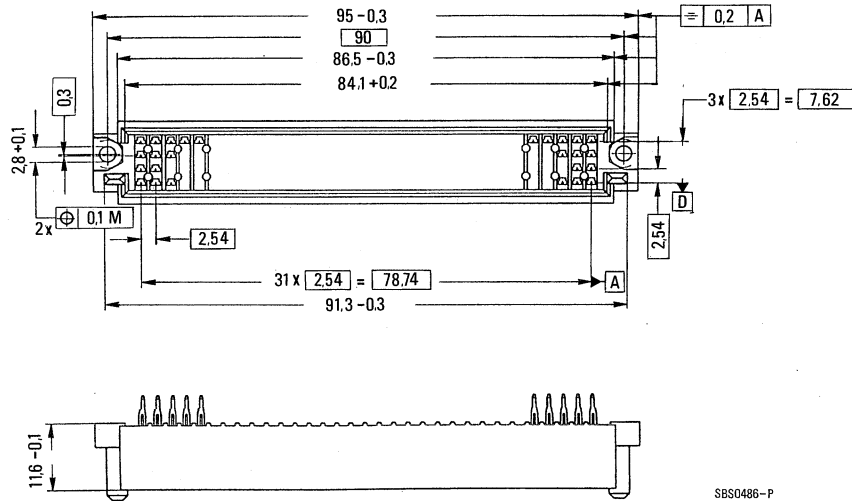
With premating LF contacts (a1 ... d1, a32 ... d32)

Compatible with DIN types

Contact overlap $\geq 2,8$ mm

Packing density: 15,24 mm ($\cong$ 3 modular spacings)

2,54 mm center spacing



SBS0486-P

Dimensions in mm

No. of contacts	Equipped contact rows	Performance level	Ordering code	PU Pcs/ea	Price each				
					1 +	50 +	100 +	500 +	
▼ 128	a b c d	2	V23532-A1000-D263	20					

Female connector, 1/2 length

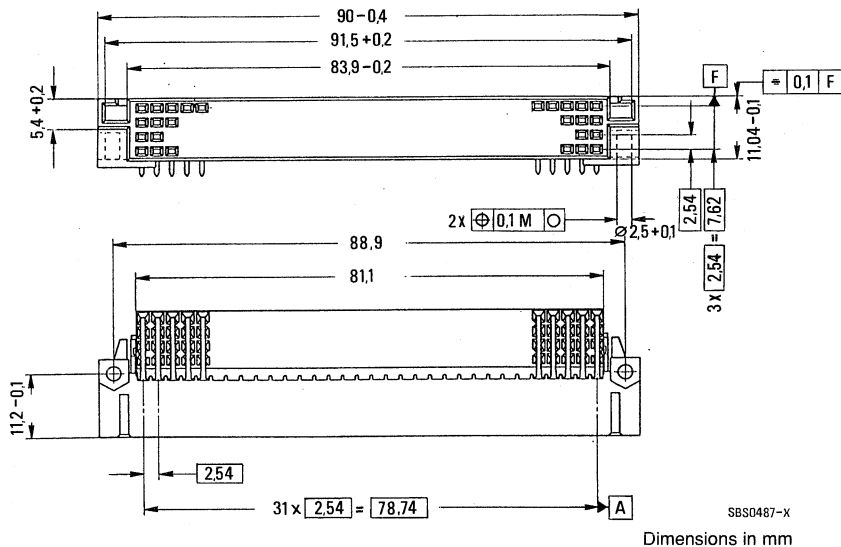
Design based on DIN 41612 (4-row dielectric)

With solder pins angled at 90°, 3 mm

Compatible with DIN types

Packing density: 15,24 mm (≥ 3 modular spacings)

2,54 mm center spacing



No. of contacts	Equipped contact rows	Perfor- mance level	Ordering code	PU Pcs/ea	Price each			
					1 +	50 +	100 +	500 +
▼ 128	a b c d	2	V23532-A1000-E200	20				

Adapter system KIT, unscreened

The set comprises

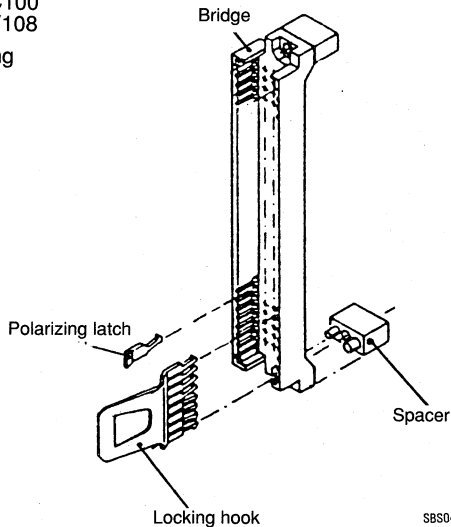
- 1 bridge V23532C1000-S432,
- 2 spacers V23532C1000-A700
- 1 adapter V23532A9999-Z3
- 8 polarizing latches V23532C1000-C100
- 4 locking hooks V23532C1000-V108

Suitable for applications with 1/10 inch spacing

Packing density 15,24 mm

4 rows

Connection conditions similar to DIN 41612



SBS0488-6

Material:

Bridge: thermoplastic material,
glass-fiber reinforced

The following are required for securing the bridge:

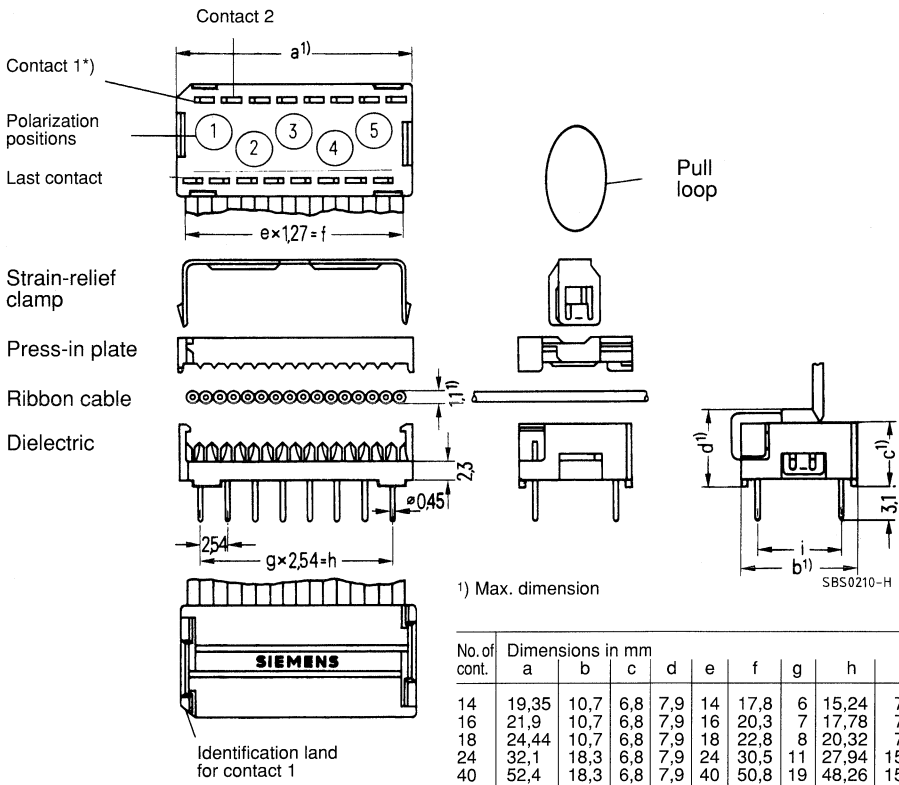
- 2 machine screws M2,5 × 18 DIN 84
(for 20 mm pins)
- 1 hexagon nut M2,5 DIN 439

Item	Ordering code	PU Pcs/ea	Price each			
			1 +	50 +	100 +	500 +
▼ Adapter system KIT, complete	V23532-C1020-B432	50				

Insulation-Displacement Connectors for Ribbon Cables BK-DIL 368

Dual-in-line connector BK-DIL 368

14, 16, 18, 24 and 40 contacts
For printed circuits or as plug-in version
2,54 mm center spacing



For permanent installation or for plugging in in conjunction with socket BK-DIL 390.

Version

- Suitable for the following cable cross sections in acc. with DIN/VDE 0811:
stranded wire 0,09 mm² (AWG 28/7) only with strain-relief clamp and 0,14 mm² (AWG 26/7);
solid wire 0,25 mm Ø (AWG 30/1) and 0,32 mm Ø (AWG 28/1);
center spacing: 1,27 mm; insulation thickness: max. 1,27 mm

Technical data

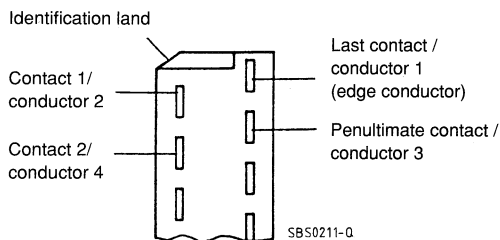
Dielectric:	thermoplastic material, glass-fiber reinforced
Contact material:	copper alloy
Contact surface:	insertion area: gold on nickel; soldering area: tin on nickel insulation displacement terminal: tin on nickel

*) Contact 1 is not identical to the conductor number of the ribbon cable

Insulation-Displacement Connectors for Ribbon Cables BK-DIL 368

Current rating per contact at 20 °C/70 °C/100 °C	2 A/1 A/0,5 A
Test voltage	0,5 kV
Insulation resistance	$\geq 10^5 \text{ M}\Omega$
Flammability	complying with UL 94 V-1
Temperature range	- 55 °C ... + 125 °C
Connection frequency	performance level 3 ≥ 50 insertion/removal cycles
Approvals	UL E 92320 VOL 1 SEC3

Assignment information (View onto insulation-displacement terminal contacts)



No. of contacts	Ordering code	PU	Price each				
			Pcs/ea	1 +	100 +	500 +	
BK-DIL connector, plug-in (nickel and hard-gold-plated pins)							
14	C42334-A368-A14	25					
16	C42334-A368-A16	25					
18	C42334-A368-A18	25					
24	C42334-A368-A24	25					
40	C42334-A368-A40	25					
BK-DIL connector, solderable (nickel and tin-plated pins)							
14	C42334-A368-A15	25					
16	C42334-A368-A17	25					
Strain-relief clamp							
14	C42334-A368-C4	de- pends on order qty.					
16	C42334-A368-C5						
18	C42334-A368-C9						
24	C42334-A368-C6						
40	C42334-A368-C7						
Pull loop for plug-in connectors							
14 and 16	C42334-A368-C8	25					

Insulation-Displacement Connectors for Ribbon Cables BK-DIL 390

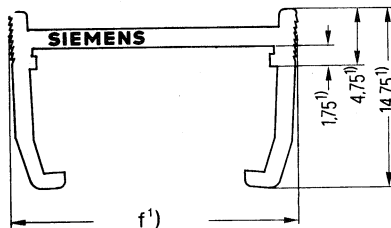
Dual-in-line socket BK-DIL 390

14, 16, 18, 24 and 40 contacts

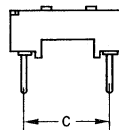
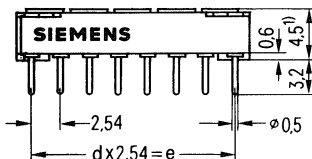
For printed circuits

2,54 mm center spacing

Latch

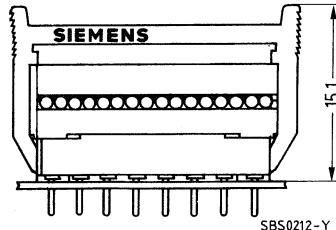
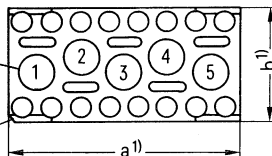


Socket



Polarization positions

Identification land for contact 1



SBS0212-Y

No. of cont.	Dimensions in mm					
	a	b	c	d	e	f
14	17,8	10,15	7,62	6	15,24	22,5
16	20,3	10,15	7,62	7	17,78	25,1
18	22,85	10,15	7,62	8	20,32	27,6
24	30,5	17,8	15,24	11	27,94	35,3
40	50,8	17,8	15,24	19	48,26	55,6

1) Max. dimension

Socket for connector BK-DIL 368

Version

- Precision circular contacts with gold-plated internal spring for contact pins with a diameter 0,4 to 0,55 mm or a diagonal dimension of 0,4 to 0,65 mm
- Identification land for identifying the first contact
- Polarizing stud with insertion sleeve for polarizing between plug BK-DIL 368 and socket BK-DIL 390
- Latch to prevent disconnection and to assist removal

Insulation-Displacement Connectors for Ribbon Cables BK-DIL 390

Technical data

Dielectric: thermoplastic material, glass-fiber reinforced
 Contact material: copper alloy
 Contact surface: insertion area: gold on nickel
 soldering area: tin on nickel

Current rating per contact
 at 20 °C/70 °C/100 °C 2 A/1 A/0,5 A
 Contact resistance $\leq 20 \text{ m}\Omega$
 Test voltage 0,5 kV
 Insulation resistance $\geq 10^5 \text{ M}\Omega$
 Flammability complying with UL 94 V-1
 Temperature range $-55^\circ\text{C} \dots +125^\circ\text{C}$
 Connection frequency performance level 3 ≥ 50 insertion/removal cycles
 Approvals UL E 92320 VOL 1 SEC3

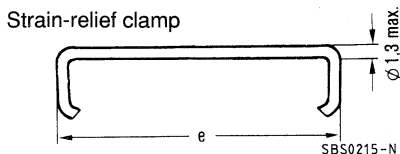
No. of contacts	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
BK-DIL socket							
14	C42334-A390-A14	25					
16	C42334-A390-A16	25					
18	C42334-A390-A18	25					
24	C42334-A390-A24	25					
40	C42334-A390-A40	25					
Latch							
14	C42334-A390-C114	25					
16	C42334-A390-C116	25					
18	C42334-A390-C118	25					
24	C42334-A390-C124	25					
40	C42334-A390-C140	25					
Polarizing stud							
any	C42334-A390-C2	50					

Insulation-Displacement Connectors for Ribbon Cables BK-LEV 413

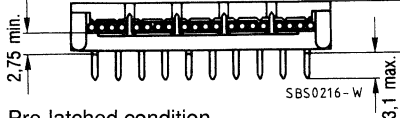
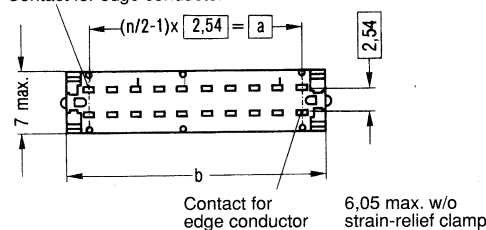
PCB connector BK-LEV 413

6, 10, 14, 16, 20, 26, 32, 34, 40, 50, 60 and 64 contacts
For printed circuits
2,54 mm center spacing

Strain-relief clamp

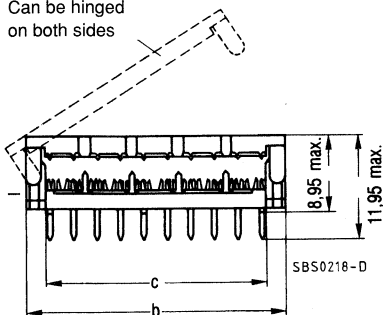


Contact for edge conductor



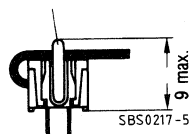
Pre-latched condition

Can be hinged
on both sides



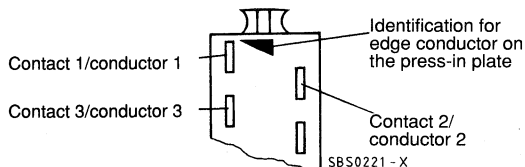
No. of contacts = n	Dimensions in mm			
	a	b max.	c min.	e max.
6	5,08	11,92	7,22	13,0
10	10,16	17,00	12,30	18,1
14	15,24	22,08	17,38	23,2
16	17,78	24,64	19,92	25,7
20	22,86	29,70	25,00	30,8
26	30,48	37,32	32,62	38,4
32	38,10	44,94	40,24	46,0
34	40,64	47,48	42,78	48,6
40	48,26	55,10	50,40	56,2
50	60,96	67,80	63,10	68,9
60	73,66	80,50	75,80	81,6
64	78,74	85,58	80,88	86,7

With strain-relief clamp



Assignment information

(View onto insulation-displacement terminal contacts)



Can be used as center or terminal connector.

Version

- Suitable for cable cross sections in acc. with DIN/VDE 0811:
stranded wire 0,09 mm² (AWG 28/7) and 0,14 mm² (AWG 26/7)
solid wire 0,25 mm $\varnothing$ (AWG 30/1) and 0,32 mm $\varnothing$ (AWG 28/1)
center spacing: 1,27 mm; insulation thickness: max. 1,1 mm
- Dielectric: pre-latching of press-in plate and dielectric
- Additional locking of press-in plate by press-in stud
- Processing with automatic connector feed possible

Insulation-Displacement Connectors for Ribbon Cables BK-LEV 413

Technical data

Dielectric: thermoplastic material, glass-fiber reinforced
 Contact material: copper alloy
 Contact surface: insulation-displacement terminal: tin on nickel
 solder pin: tin on nickel

Current rating per contact

at 20 °C/70 °C/100 °C

2 A/1 A/0,5 A

Test voltage

0,5 kV

Insulation resistance

≥ 10⁹ kΩ

Flammability

complying with UL 94 V-0

Temperature range

– 55 °C ... + 125 °C

Approvals

UL E 92320 VOL 1 SEC3

No. of contacts	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		

PCB connector

6	V23535-B1780-C60	50					
10	V23535-B1780-C100	35					
14	V23535-B1780-C140	25					
16	V23535-B1780-C160	25					
20	V23535-B1780-C200	20					
26	V23535-B1780-C260	15					
32	V23535-B1780-C320	10					
34	V23535-B1780-C340	10					
40	V23535-B1780-C400	10					
50	V23535-B1780-C500	9					
60	V23535-B1780-C600	7					
64	V23535-B1780-C640	7					

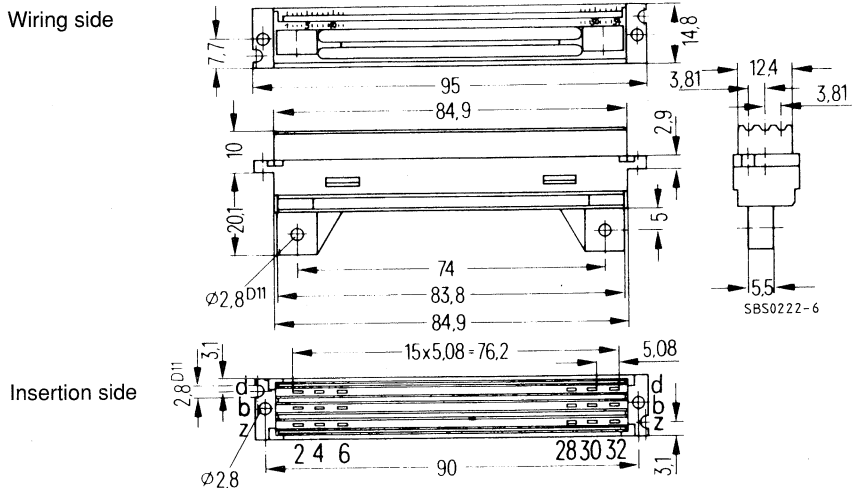
Strain-relief clamp

6	C42334-A386-C59	de- pends on order qty.					
10	C42334-A386-C61						
14	C42334-A386-C63						
16	C42334-A386-C64						
20	C42334-A386-C66						
26	C42334-A386-C69						
32	C42334-A386-C72						
34	C42334-A386-C73						
40	C42334-A386-C76						
50	C42334-A386-C81						
60	C42334-A386-C86						
64	C42334-A386-C88						

Insulation-Displacement Connectors for Ribbon Cables BK-DIN 350

Female connector BK-DIN 350

Connection conditions in acc. with DIN 41612
Design F; 32 and 48 contacts



As front end connector in conjunction with 48-contact blade-contact connectors as per DIN 41612, design F. Can be used as terminal connector.

Version

- With 32 single contacts (rows b and z with 16 contacts each) and grounding strip (row d); one screening conductor is provided between each of the signal conductors or
- with 48 single contacts (rows b, d and z with 16 contacts each)
- Suitable cable cross sections: stranded wire 0,22 mm² (AWG 24/7); center spacing: 1,27 mm; insulation thickness: max. 1,1 mm

Technical data

Dielectric:	thermoplastic material, glass-fiber reinforced
Contact material:	copper beryllium
Contact surface:	insertion area: gold on nickel insulation-displacement terminal: tin on nickel

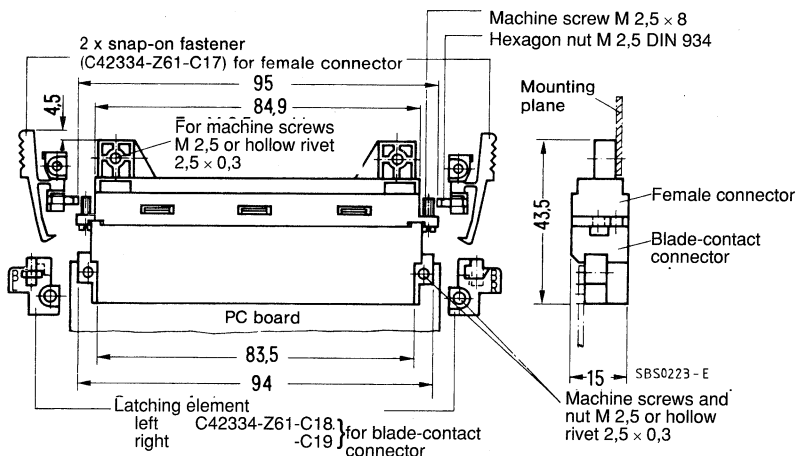
Current rating per contact (for cable cross section 0,22 mm ²)	
at 20 °C/70 °C/100 °C	4,5 A/3 A/1 A
Test voltage	0,5 kV
Contact resistance	≤ 15 mΩ
Insulation resistance	≥ 10 ⁵ MΩ

Insulation-Displacement Connectors for Ribbon Cables BK-DIN 350

Flammability
Temperature range
Connection frequency

complying with UL 94 V-1
– 55 °C ... + 125 °C
performance level 1 ≥ 500 insertion/removal cycles

Mounting of latching elements



Version	Ordering code	PU	Price each				
			Pcs/ea	1 +	100 +	500 +	
48-contact female connector with single contacts	C42334-A350-A1	10					
32-contact female connector with single contacts and grounding strip	C42334-A350-A2	10					
Accessories							
Snap-on fastener for female connector ¹⁾	C42334-Z61-C17	depends on order qty.					
Latching element for blade-contact connector (left)	C42334-Z61-C18						
Latching element for blade-contact connector (right)	C42334-Z61-C19						

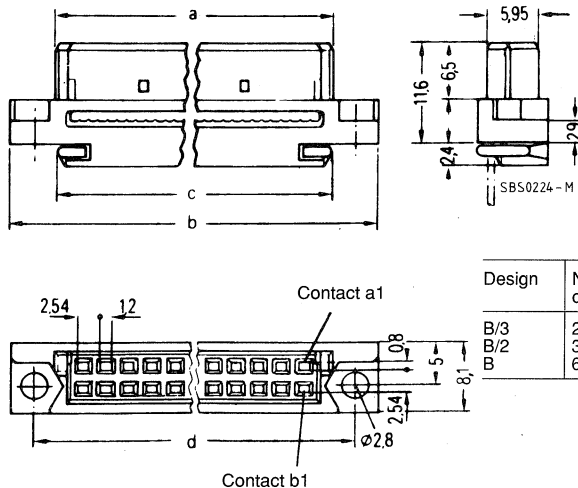
¹⁾ 2 snap-on fasteners per female connector are required for locking the female connector to the blade-contact connector.

Insulation-Displacement Connectors for Ribbon Cables BK-DIN 389

Female connector BK-DIN 389

Connection conditions in acc. with DIN 41612

Design B; 20, 32 and 64 contacts



Design	No. of contacts	Dimensions in mm			
		a	b	c	d
B/3	20	29,2	39,76	28,90	34,76
B/2	32	44,4	55	44,16	50
B	64	85	95	84,80	90

Can be used as center and terminal connector.

Version

- Suitable for cable cross sections in acc. with DIN/VDE 0811:
stranded wire 0,09 mm² (AWG 28/7) only with strain-relief clamp and 0,14 mm² (AWG 26/7);
solid wire 0,25 mm Ø (AWG 30/1) and 0,32 mm Ø (AWG 28/1);
center spacing: 1,27 mm; insulation thickness: max. 1,27 mm
- Pre-latching of press-in plate and dielectric by double snap-in stage

Technical data

Dielectric: thermoplastic material, glass-fiber reinforced
Contact material: copper alloy
Contact surface: insertion area: gold on nickel
insulation-displacement terminal: tin on nickel

Current rating per contact

at 20 °C/70 °C/100 °C

Test voltage

Insulation resistance

Flammability

Temperature range

Connection frequency

2 A/1 A/0,5 A

0,5 kV

≥ 10⁵ MΩ

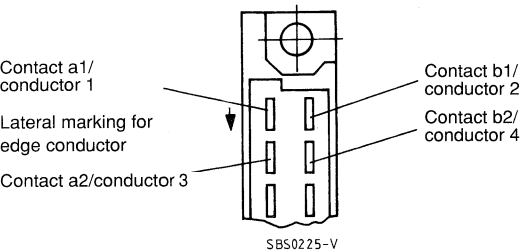
complying with UL 94 V-1

– 55 °C ... + 125 °C

performance level 3 ≥ 50 insertion/removal cycles

Insulation-Displacement Connectors for Ribbon Cables BK-DIN 389

Assignment information (View onto insertion side)



No. of contacts	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
Modular female connector							
20	C42334-A389-A20	25					
32	C42334-A389-A32	25					
64	C42334-A389-A64	25					
Strain-relief clamp							
20	C42334-A389-C120	depends on order qty.					
32	C42334-A389-C132						
64	C42334-A389-C164						

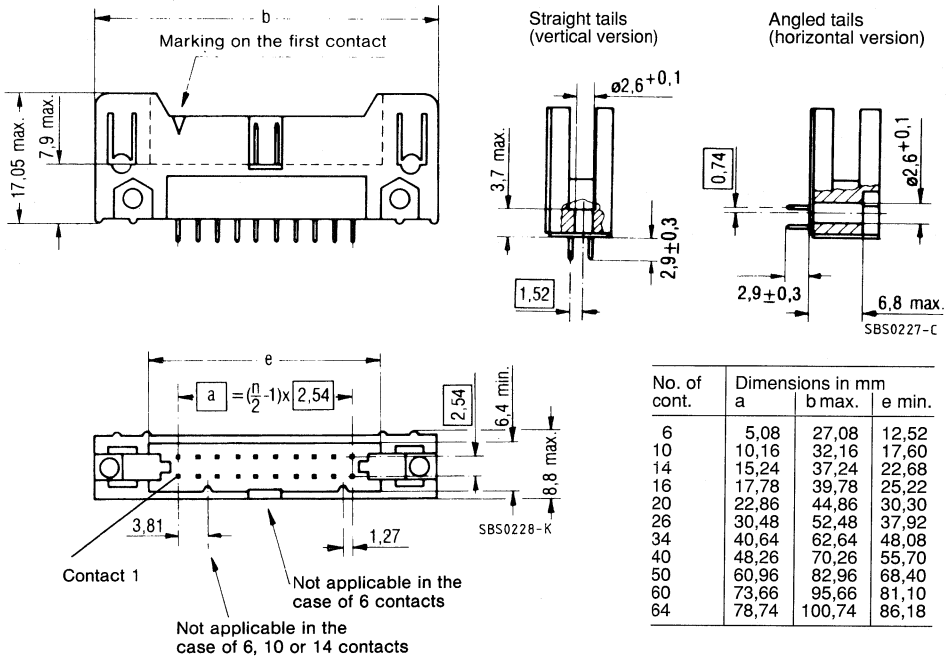
Insulation-Displacement Connectors for Ribbon Cables BK-MOD 421/422

Modular grid connector BK-MOD 421/422

Pin and female connectors in acc. with DIN 41651
6, 10, 14, 16, 20, 26, 34, 40, 50, 60 and 64 contacts

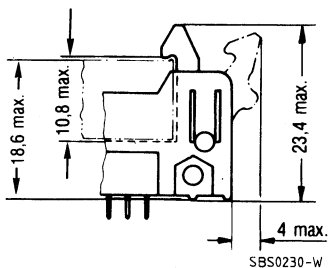
Pin connectors BK-MOD 421 (standard and compact headers) for mating with female connectors BK-MOD 422. For terminal and bus connection.

Standard header (pin connector)

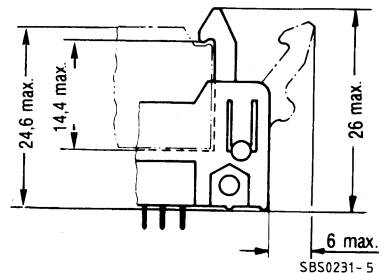


Locking facilities (with ejection function)

Locking hook short,
f. female connector without strain-relief clamp



Locking hook long,
f. female connector with strain-relief clamp

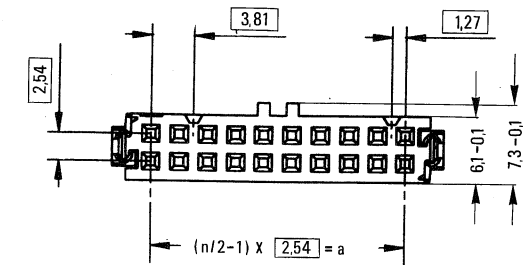


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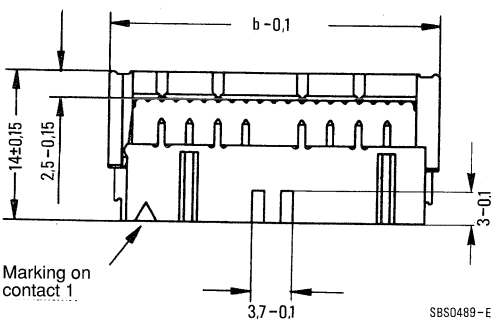
Insulation-Displacement Connectors for Ribbon Cables BK-MOD 421/422

Female connector

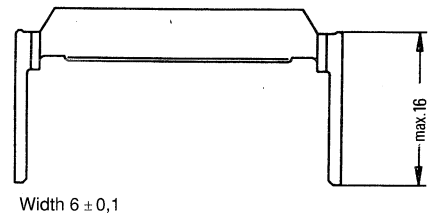
comprising press-in plate and upper section



No. of contacts	Dimensions in mm	
	a	b max.
6	5,08	12,20
10	10,16	17,30
14	15,24	22,40
16	17,78	24,90
20	22,86	30,00
26	30,48	37,60
34	40,64	47,80
40	48,26	55,40
50	60,96	68,10
60	73,66	80,80
64	78,74	85,90



Strain-relief clamp



SBS0490-H

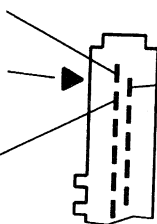
Assignment information (View on insulation-displacement terminal contacts)

Contact 1/conductor 1
(edge conductor)

Lateral marking for
edge conductor

Contact 3/conductor 3

Contact 2/conductor 2



SBS0491-Q

Version

- Header for printed circuits
- Suitable cable cross sections in acc. with DIN/VDE 0811:
stranded wire 0,09 mm² (AWG 28/7) and 0,14 mm² (AWG 26/7)
solid wire 0,25 mm Ø (AWG 30/1) and 0,32 mm Ø (AWG 28/1)
center spacing: 1,27 mm; insulation thickness: max. 1,1 mm
- Center polarization (except version with 6 contacts) and polarizing lugs
- Female connector with pre-latched press-in plate

Insulation-Displacement Connectors for Ribbon Cables BK-MOD 421/422

Technical data

Dielectric: thermoplastic material, glass-fiber reinforced

	Pin connector	Female connector
Contact material	Copper alloy	Copper alloy
Contact surface	Contact pin: Pd on Au (flash) Solder pin: tin on nickel	Insertion area: double contact Pd on Au (flash) Insulation-displacement terminal: tin on nickel

Current rating per contact at 20 °C/70 °C/100 °C	1,5 A/1 A/0,5 A
Test voltage contact-contact	0,94 kV
Insulation resistance	≥ 10 ⁵ MΩ
Flammability	complying with UL 94 V-0
Temperature range	– 55 ... + 125 °C
Connection frequency	performance level 2 ≥ 200 insertion/removal cycles

No. of contacts	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		

Standard header with straight solder pins (without locking facility)

6	V23535-A1200-A60	80					
10	V23535-A1200-A100	80					
14	V23535-A1200-A140	80					
16	V23535-A1200-A160	80					
20	V23535-A1200-A200	80					
26	V23535-A1200-A260	40					
34	V23535-A1200-A340	40					
40	V23535-A1200-A400	40					
50	V23535-A1200-A500	40					
60	V23535-A1200-A600	40					
64	V23535-A1200-A640	40					

Standard header with solder pins angled at 90° (without locking facility)

6	V23535-A1210-A60	80					
10	V23535-A1210-A100	80					
14	V23535-A1210-A140	80					
16	V23535-A1210-A160	80					
20	V23535-A1210-A200	80					
26	V23535-A1210-A260	40					
34	V23535-A1210-A340	40					
40	V23535-A1210-A400	40					
50	V23535-A1210-A500	40					
60	V23535-A1210-A600	40					
64	V23535-A1210-A640	40					

Locking hooks for standard header (2 hooks per header required)

short	C42334-A421-C30	depends on order qty.					
long	C42334-A421-C31						

Insulation-Displacement Connectors for Ribbon Cables BK-MOD 421/422

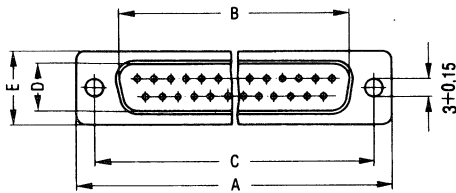
No. of contacts	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
Compact header with straight solder pins (without locking facility)							
6	V23535-A2200-A60	80					
10	V23535-A2200-A100	80					
14	V23535-A2200-A140	80					
16	V23535-A2200-A160	80					
20	V23535-A2200-A200	80					
26	V23535-A2200-A260	40					
34	V23535-A2200-A340	40					
Compact header with solder pins angled at 90° (without locking facility)							
6	V23535-A2210-A60	80					
10	V23535-A2210-A100	80					
14	V23535-A2210-A140	80					
16	V23535-A2210-A160	80					
20	V23535-A2210-A200	80					
26	V23535-A2210-A260	40					
34	V23535-A2210-A340	40					
Locking hook for compact header (1 hook per header required)							
short, right	C42334-A421-C41	de- pends on order qty.					
short, left	C42334-A421-C51						
long, right	C42334-A421-C42						
long, left	C42334-A421-C52						
Female connector (without strain-relief clamp); packing mode: bar magazine							
6	V23535-A3280-C61	50					
10	V23535-A3280-C101	35					
14	V23535-A3280-C141	25					
16	V23535-A3280-C161	25					
20	V23535-A3280-C201	20					
26	V23535-A3280-C261	15					
34	V23535-A3280-C341	10					
40	V23535-A3280-C401	10					
50	V23535-A3280-C501	9					
60	V23535-A3280-C601	7					
64	V23535-A3280-C641	7					
Strain-relief clamp (1 clamp per header required)							
6	C42334-A422-C306	de- pends on order qty.					
10	C42334-A422-C310						
14	C42334-A422-C314						
16	C42334-A422-C316						
20	C42334-A422-C320						
26	C42334-A422-C326						
34	C42334-A422-C334						
40	C42334-A422-C340						
50	C42334-A422-C350						
60	C42334-A422-C360						
64	C42334-A422-C364						

Subminiature Connectors SBM 383 with Soldering Terminal

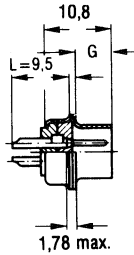
Pin and female connectors

9, 15, 25, 37 and 50 contacts
With $\varnothing$ 3 mm holes or 4-40 UNC thread

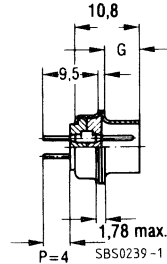
Pin connector with screen braiding



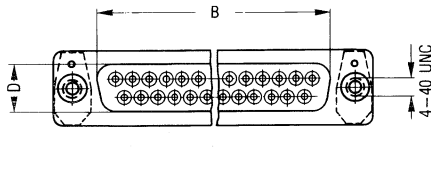
with solder lugs
for conventional
wiring



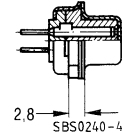
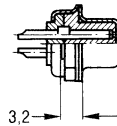
with straight solder pins
for printed circuits



Female connector
(Shown with 4-40 UNC thread)



For dimensions not specified see above



The specified dimensions are mounting dimensions (deviations are within the standard tolerances).

No. of contacts	Connector	Dimensions in mm						
		A - 0,76 - 0,76	B + 0,25 - 0,25	C		D + 0,25 - 0,25	E - 0,76 - 0,76	G - 0,3 - 0,25
9	Pin	31,19	16,79	25	+ 0,12/- 0,13	8,23	12,93	6,12
9	Female	31,19	16,46	25	+ 0,12/- 0,13	8,02	12,93	6,3
15	Pin	39,52	25,12	33,3	+ 0,15/- 0,1	8,23	12,93	6,12
15	Female	39,52	24,79	33,3	+ 0,15/- 0,1	8,02	12,93	6,3
25	Pin	53,42	38,84	47,04	+/- 0,13	8,23	12,93	5,99
25	Female	53,42	38,5	47,04	+/- 0,13	8,02	12,93	6,3
37	Pin	69,7	55,3	63,5	+/- 0,13	8,23	12,93	5,99
37	Female	69,7	54,96	63,5	+/- 0,13	8,02	12,93	6,3
50 ¹⁾	Pin	67,31	52,68	61,1	+ 0,14/- 0,11	10,95	15,75	5,99
50 ¹⁾	Female	67,31	52,55	61,1	+ 0,14/- 0,11	10,87	15,75	6,3

¹⁾ 3-row dielectric

Technical data

Dielectric: thermoplastic material, glass-fiber reinforced

Protective collar: steel, nickel-plated and tinned

Contacts: copper alloy, punched/rolled, insertion area nickel and hard-gold-plated

Tails: tinned

Subminiature Connectors SBM 383 with Soldering Terminal

Current rating per contact (at 20 °C ambient temperature)	5 A
Dielectric strength (test voltage) at 860 ... 1060 mbar atm. pressure	1000 V, 50 Hz
Contact resistance (performance level 3)	≤ 15 mΩ
Insulation resistance	≥ 5 · 10 ⁹ Ω
Service life (performance level 3)	≥ 50 insertion/removal cycles
Flammability	self-extinguishing after < 10 s, UL 94 V-0
Temperature range	- 55 ... + 125 °C
Approvals	UL listed: File E 92320, Project 85 ME 3872

Item	No. of contacts	Ordering code	PU	Price each				
Connector			Pcs/ea	1 +	100 +	500 +		

With solder lugs; Ø 3 mm holes

Pin	9	V42254-A1115-C309	70					
Female	9	V42254-A1115-B309	70					
Pin	15	V42254-A1115-C315	70					
Female	15	V42254-A1115-B315	70					
Pin	25	V42254-A1115-C325	60					
Female	25	V42254-A1115-B325	60					
Pin	37	V42254-A1115-C337	60					
Female	37	V42254-A1115-B337	60					
Pin	50	V42254-A1115-C350	55					
Female	50	V42254-A1115-B350	55					

With solder lugs; 4-40 UNC thread

Pin	9	V42254-A1112-C309	70					
Female	9	V42254-A1112-B309	70					
Pin	15	V42254-A1112-C315	70					
Female	15	V42254-A1112-B315	70					
Pin	25	V42254-A1112-C325	60					
Female	25	V42254-A1112-B325	60					
Pin	37	V42254-A1112-C337	60					
Female	37	V42254-A1112-B337	60					
Pin	50	V42254-A1112-C350	55					
Female	50	V42254-A1112-B350	55					

With solder pins (2,76 mm × 2,84 mm center spacing); Ø 3 mm holes

Pin	9	V42254-A2115-C309	70					
Female	9	V42254-A2115-B309	70					
Pin	15	V42254-A2115-C315	70					
Female	15	V42254-A2115-B315	70					
Pin	25	V42254-A2115-C325	60					
Female	25	V42254-A2115-B325	60					
Pin	37	V42254-A2115-C337	60					
Female	37	V42254-A2115-B337	60					
Pin	50	V42254-A2115-C350	55					
Female	50	V42254-A2115-B350	55					

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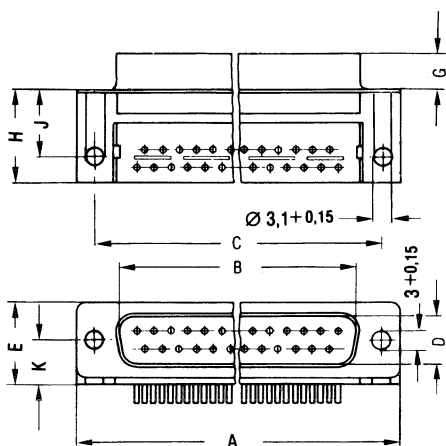
Subminiature Connectors SBM 383 with Soldering Terminal

Pin and female connectors (angle connectors)

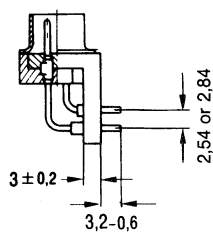
9, 15, 25, 37 and 50 contacts

Solder pins angled at 90°, for printed circuits

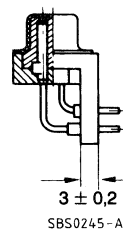
Pin connectors with screen braiding



Pin connector



Female connector



No. of contacts	Connector	Dimensions in mm								
		A	B	C	D	E	G	H	J	K
		$-0,76$ $-0,76$	$-0,25$ $-0,25$	$-0,25$ $-0,25$	$+0,25$ $-0,25$	max. max.	$-0,3$ $-0,25$	max. max.	$\pm 0,2$ $\pm 0,2$	$\pm 0,2$ $\pm 0,2$
9	Pin	31,19	16,79	25,12	8,23	13,9	6,12	16	11,7	7,3
9	Female	31,19	16,46	25,12	8,02	13,9	6,3	16	11,7	7,3
15	Pin	39,52	25,12	33,45	8,23	13,9	6,12	16	11,7	7,3
15	Female	39,52	24,79	33,45	8,02	13,9	6,3	16	11,7	7,3
25	Pin	53,42	38,84	47,17	8,23	13,9	5,99	16	11,7	7,3
25	Female	53,42	38,5	47,17	8,02	13,9	6,3	16	11,7	7,3
37	Pin	69,7	55,3	63,63	8,23	13,9	5,99	16	11,7	7,3
37	Female	69,7	54,96	63,63	8,02	13,9	6,3	16	11,7	7,3

Subminiature Connectors SBM 383 with Soldering Terminal

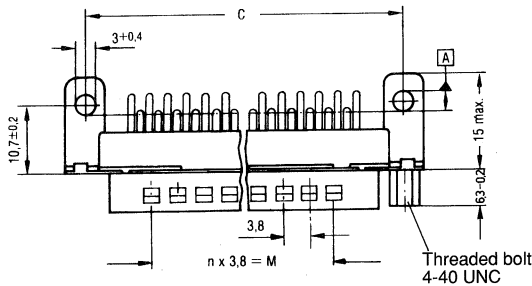
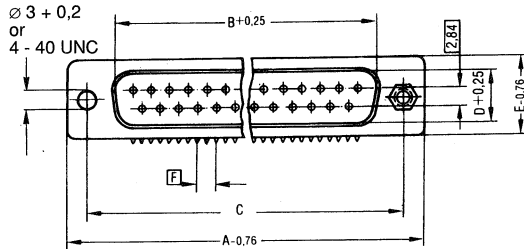
Item	No. of contacts	Ordering code	PU	Price each				
Connector			Pcs/ea	1 +	100 +	500 +		
With solder pins (2,76 mm × 2,84 mm center spacing)								
Pin	9	V42254-A3216-C309	56					
Female	9	V42254-A3216-B309	56					
Pin	15	V42254-A3216-C315	56					
Female	15	V42254-A3216-B315	56					
Pin	25	V42254-A3216-C325	40					
Female	25	V42254-A3216-B325	40					
Pin	37	V42254-A3216-C337	40					
Female	37	V42254-A3216-B337	40					
Pin	50	V42254-A3216-C350	35					
Female	50	V42254-A3216-B350	35					
With solder pins (2,76 mm × 2,54 mm center spacing)								
Pin	9	V42254-A3226-C309	56					
Female	9	V42254-A3226-B309	56					
Pin	15	V42254-A3226-C315	56					
Female	15	V42254-A3226-B315	56					
Pin	25	V42254-A3226-C325	40					
Female	25	V42254-A3226-B325	40					
Pin	37	V42254-A3226-B337	40					
Female	50	V42254-A3226-B350	35					

Subminiature Connectors SBM 383 with Soldering Terminal

Pin and female connectors (angle connectors)

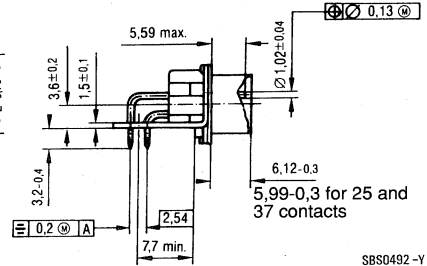
With metal bracket, mounting height 3,6 mm
9, 15, 25 and 37 contacts
Solder pins angled at 90°, for printed circuits
With $\varnothing$ 3 mm hole, 4-40 UNC thread, 4-40 UNC threaded bolt, or mounting clip
Pin connector with screen braiding

The metal bracket ensures optimum grounding



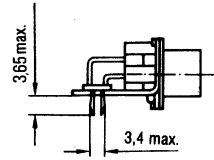
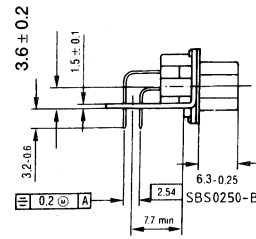
Version with mounting clip

Pin connector



SBS0492-Y

Female connector



SBS0493-7

No. of contacts	Con- nector	Dimensions in mm							
		A	B	C	D	E	F	M	n
9	Pin	31,19	16,79	25,0 + 0,12/- 0,13	8,23	12,93	2,74	7,6	2
9	Female	31,19	16,46	25,0 + 0,12/- 0,13	8,02	12,93	2,74	-	-
15	Pin	39,52	25,12	33,3 + 0,15/- 0,1	8,23	12,93	2,74	15,2	4
15	Female	39,52	24,79	33,3 + 0,15/- 0,1	8,02	12,93	2,74	-	-
25	Pin	53,42	38,84	47,04 + 0,13/- 0,13	8,23	12,93	2,76	26,6	7
25	Female	53,42	38,5	47,04 + 0,13/- 0,13	8,02	12,93	2,76	-	-
37	Pin	69,7	55,3	63,5 + 0,13/- 0,13	8,23	12,93	2,76	41,8	11
37	Female	69,7	54,96	63,5 + 0,13/- 0,13	8,02	12,93	2,76	-	-

Subminiature Connectors SBM 383 with Soldering Terminal

Item	No. of contacts	Ordering code	PU	Price each				
Connector			Pcs/ea	1 +	100 +	500 +		

With solder pins (2,76 mm × 2,54 mm center spacing); Ø 3 mm hole

▼ Pin	9	V23529-B1121-C309	70					
▼ Female	9	V23529-B1121-B309	70					
▼ Pin	15	V23529-B1121-C315	70					
▼ Female	15	V23529-B1121-B315	70					
▼ Pin	25	V23529-B1121-C325	50					
▼ Female	25	V23529-B1121-B325	50					
▼ Pin	37	V23529-B1121-C337	50					
▼ Female	37	V23529-B1121-B337	50					

With solder pins (2,76 mm × 2,54 mm center spacing); 4-40 UNC thread

▼ Pin	9	V23529-B1123-C309	70					
▼ Female	9	V23529-B1123-B309	70					
▼ Pin	15	V23529-B1123-C315	70					
▼ Female	15	V23529-B1123-B315	70					
▼ Pin	25	V23529-B1123-C325	50					
▼ Female	25	V23529-B1123-B325	50					
▼ Pin	37	V23529-B1123-C337	50					
▼ Female	37	V23529-B1123-B337	50					

With solder pins (2,76 mm × 2,54 mm center spacing); 4-40 UNC threaded bolt

Pin	9	V23529-B1125-C309	70					
Female	9	V23529-B1125-B309	70					
Pin	15	V23529-B1125-C315	70					
Female	15	V23529-B1125-B315	70					
Pin	25	V23529-B1125-C325	50					
Female	25	V23529-B1125-B325	50					
Pin	37	V23529-B1125-C337	50					
Female	37	V23529-B1125-B337	50					

With solder pins (2,76 mm × 2,54 mm center spacing); Ø 3 mm holes and mounting clip

▼ Pin	9	V23529-B1223-C309	70					
▼ Female	9	V23529-B1223-B309	70					
▼ Pin	15	V23529-B1223-C315	70					
▼ Female	15	V23529-B1223-B315	70					
▼ Pin	25	V23529-B1223-C325	50					
▼ Female	25	V23529-B1223-B325	50					
▼ Pin	37	V23529-B1223-C337	50					
▼ Female	37	V23529-B1223-B337	50					

Subminiature Connectors SBM 383 with Soldering Terminal

Pin and female connectors (angle connectors)

With metal bracket, mounting height 7,3 mm

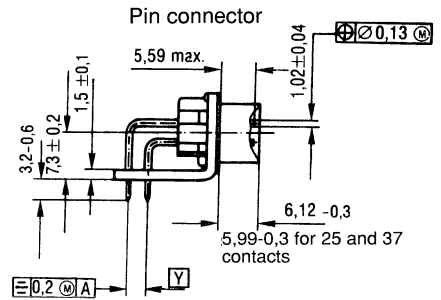
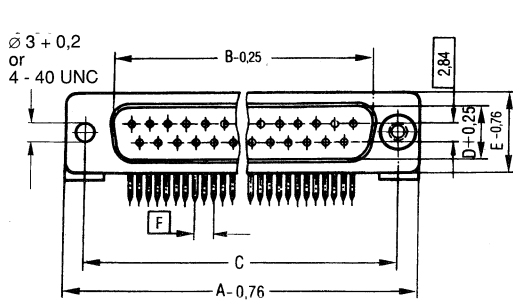
9, 15, 25 and 37 contacts

Solder pins angled at 90°, for printed circuits

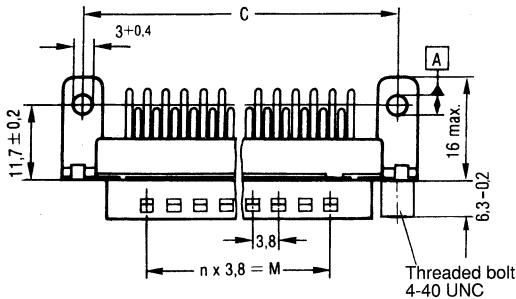
With $\varnothing 3$ mm hole, 4-40 UNC thread, 4-40 UNC threaded bolt, or mounting clip

Pin connector with screen braiding

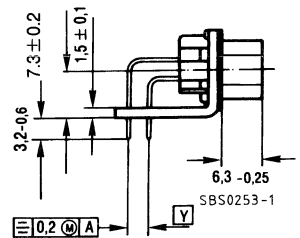
The metal bracket ensures optimum grounding



SBS0494 - F



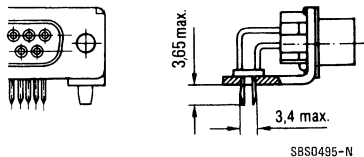
Female connector



SBS0253-1

For dimensions of pin and female connector refer to page 565

Version with mounting clip



SBS0495-N

Dimensions in mm

Subminiature Connectors SBM 383 with Soldering Terminal

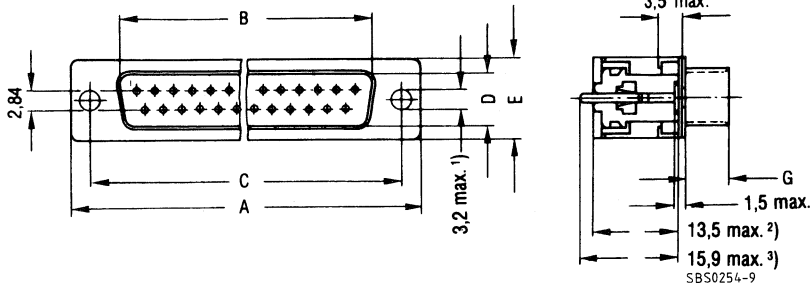
Item	No. of con- tacts	Ordering code	PU	Price each				
Connector			Pcs/ea	1 +	100 +	500 +		
With solder pins (2,76 mm × 2,84 mm center spacing); Ø 3 mm hole								
Pin	9	V23529-A1111-C309	70					
Female	9	V23529-A1111-B309	70					
Pin	15	V23529-A1111-C315	70					
Female	15	V23529-A1111-B315	70					
Pin	25	V23529-A1111-C325	50					
Female	25	V23529-A1111-B325	50					
Pin	37	V23529-A1111-C337	50					
Female	37	V23529-A1111-B337	50					
With solder pins (2,76 mm × 2,84 mm center spacing); 4-40 UNC thread								
Pin	9	V23529-A1113-C309	70					
Female	9	V23529-A1113-B309	70					
Pin	15	V23529-A1113-C315	70					
Female	15	V23529-A1113-B315	70					
Pin	25	V23529-A1113-C325	50					
Female	25	V23529-A1113-B325	50					
Pin	37	V23529-A1113-C337	50					
Female	37	V23529-A1113-B337	50					
With solder pins (2,76 mm × 2,84 mm center spacing); 4-40 UNC threaded bolt								
Pin	9	V23529-A1115-C309	70					
Female	9	V23529-A1115-B309	70					
Pin	15	V23529-A1115-C315	70					
Female	15	V23529-A1115-B315	70					
Pin	25	V23529-A1115-C325	50					
Female	25	V23529-A1115-B325	50					
Pin	37	V23529-A1115-C337	50					
Female	37	V23529-A1115-B337	50					
With solder pins (2,76 mm × 2,54 mm center spacing); 4-40 UNC thread								
Pin	9	V23529-A1123-C309	70					
Female	9	V23529-A1123-B309	70					
Pin	15	V23529-A1123-C315	70					
Female	15	V23529-A1123-B315	70					
Pin	25	V23529-A1123-C325	50					
Female	25	V23529-A1123-B325	50					
Pin	37	V23529-A1123-C337	50					
Female	37	V23529-A1123-B337	50					
With solder pins (2,76 mm × 2,54 mm center spacing); 4-40 UNC thread and mounting clip								
Pin	9	V23529-A1223-C309	70					
Female	9	V23529-A1223-B309	70					
Pin	15	V23529-A1223-C315	70					
Female	15	V23529-A1223-B315	70					
Pin	25	V23529-A1223-C325	50					
Female	25	V23529-A1223-B325	50					
Pin	37	V23529-A1223-C337	50					
Female	37	V23529-A1223-B337	50					

Subminiature Connectors SBM 383 with Insulation-Displacement Terminal

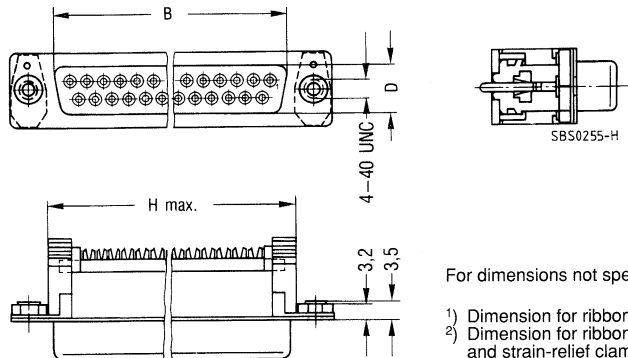
Pin and female connectors

With insulation-displacement terminal for ribbon cables, round cables or single wires
With $\varnothing 3$ mm holes or 4-40 UNC thread
9, 15, 25 and 37 contacts

Pin connector



Female connector (shown with 4-40 UNC thread)



Shown without upper section

For dimensions not specified see above

- 1) Dimension for ribbon cable fitted with contacts
- 2) Dimension for ribbon cable fitted with contacts and strain-relief clamp

No. of contacts	Connector	Dimensions in mm						
		A	B	C	D	E	G	H
		- 0,76 - 0,76	+ 0,25 - 0,25		+ 0,25 - 0,25	- 0,76 - 0,76	- 0,3 - 0,25	max. max.
9	Pin	31,19	16,79	25 + 0,12/- 0,13	8,23	12,93	6,12	18,6
9	Female	31,19	16,46	25 + 0,12/- 0,13	8,02	12,93	6,3	18,6
15	Pin	39,52	25,12	33,3 + 0,15/- 0,1	8,23	12,93	6,12	26,9
15	Female	39,52	24,79	33,3 + 0,15/- 0,1	8,02	12,93	6,3	26,9
25	Pin	53,42	38,84	47,04 +/- 0,13	8,23	12,93	5,99	40,6
25	Female	53,42	38,5	47,04 +/- 0,13	8,02	12,93	6,3	40,6
37	Pin	69,7	55,3	63,5 +/- 0,13	8,23	12,93	5,99	57,1
37	Female	69,7	54,96	63,5 +/- 0,13	8,02	12,93	6,3	57,1

Subminiature Connectors SBM 383 with Insulation-Displacement Terminal

Technical data

Contacts	copper alloy, nickel and hard-gold-plated in the insertion area, tin-plated in the connection area
Current rating per contact at 20 °C/70 °C/100 °C	2 A/1 A/0,5 A
Test voltage	0,78 kV
Insulation resistance	$\geq 5 \times 10^9 \text{ M}\Omega$
Flammability	complying with UL 94 V-0
Temperature range	- 55 °C ... + 125 °C
Connection frequency	performance level 3: ≥ 50 insertion/removal cycles
Approvals	UL listed: File E 92320, Project 85 ME 3872
Connectable cables	ribbon cable AWG 26/28 stranded wire or AWG 28/30 solid

Item	No. of contacts	Ordering code	PU	Price each				
Connector			Pcs/ea	1 +	100 +	500 +		

With insulation-displacement terminals; $\varnothing$ 3,2 mm holes

Pin	9	V42254-A5235-C309	50					
Female	9	V42254-A5235-B309	50					
Pin	15	V42254-A5235-C315	40					
Female	15	V42254-A5235-B315	40					
Pin	25	V42254-A5235-C325	30					
Female	25	V42254-A5235-B325	30					
Pin	37	V42254-A5235-C337	30					
Female	37	V42254-A5235-B337	30					

With insulation-displacement terminals; 4-40 UNC thread

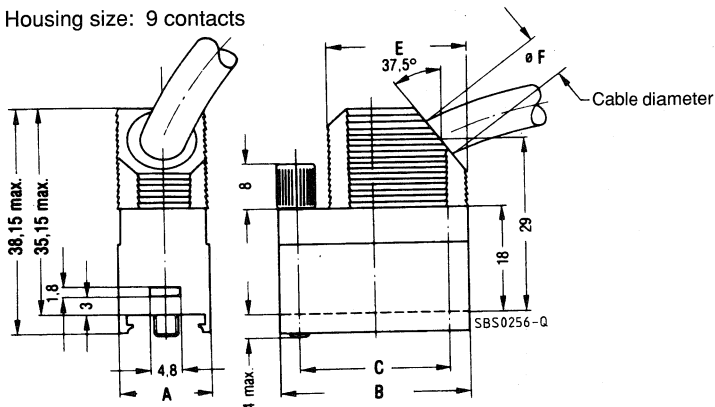
Pin	9	V42254-A5232-C309	50					
Female	9	V42254-A5232-B309	50					
Pin	15	V42254-A5232-C315	40					
Female	15	V42254-A5232-B315	40					
Pin	25	V42254-A5232-C325	30					
Female	25	V42254-A5232-B325	30					
Pin	37	V42254-A5232-C337	30					
Female	37	V42254-A5232-B337	30					

Strain-relief clamp for ribbon cables

	9	C42334-A383-C441	25					
	15	C42334-A383-C442	25					
	25	C42334-A383-C443	25					
	37	C42334-A383-C444	25					

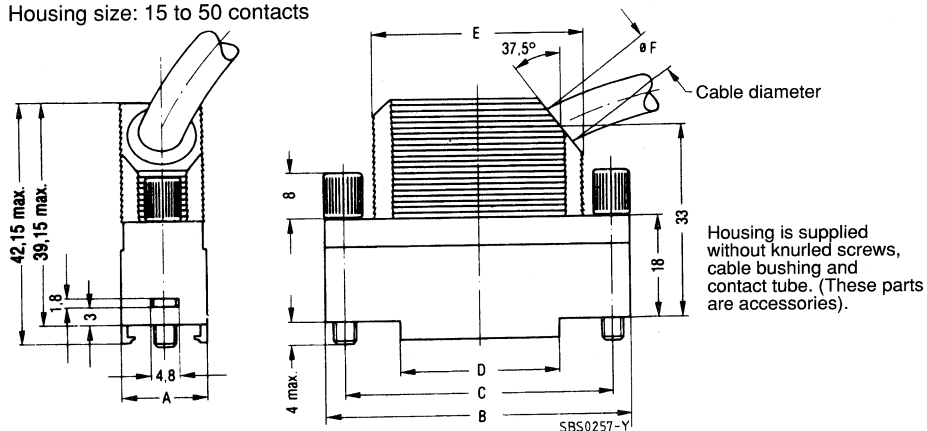
Subminiature Connectors SBM 383 Housings

Housing size: 9 contacts



Housing size	Dimensions in mm		C	D	E	F (max.)
	A (max.)	B (max.)				
9 cont.	15	31,30	25	—	23,3	∅ 4 ... 8
15 cont.	15	39,62	33,3	16,5	23,3	∅ 5 ... 9
25 cont.	15	53,52	47	30,4	37	∅ 5 ... 11
37 cont.	15	69,80	63,5	46,7	53,5	∅ 5 ... 11
50 cont.	15	67,41	61,1	44,3	51,5	∅ 10 ... 14,6

Housing size: 15 to 50 contacts



Version

- Unscreened plastic housing comprising:
Housing lower section and upper section and 2 differently sized cable clamps (use 1 ea. dependent on cable diameter) with 3 screws for strain relief.
- Screened plastic housing comprising:
Housing lower and upper section with fitted screening plates, 2 differently sized cable clamps (use 1 ea. dependent on cable diameter) with 3 screws for strain relief and for securing the cable screen.

Subminiature Connectors SBM 383

Housings/Housing Accessories

- Various locking methods possible
- Electromagnetic screening by metal plates, which are fixed inside the plastic shells

Technical data

Flammability	self-extinguishing after ≤ 10 s, UL 94 V-1
Temperature range	$-40 \dots +80$ °C
Screened version	
Attenuation at 10 MHz	≥ 60 dB
Peak voltage in the inner conductor with an electrostatic discharge of 15 kV	$\leq 1,5$ V

Housing size	Color	Ordering code	PU	Price each			
			Pcs/ea	5 +	100 +	500 +	

Unscreened housing

9 contacts	pebble grey RAL 7032	V42254-A6000-K109	25				
15 contacts		V42254-A6000-K115	25				
25 contacts		V42254-A6000-K125	15				
37 contacts		V42254-A6000-K137	15				
50 contacts		V42254-A6000-K150	15				
▼ 15 contacts	black RAL 9005	V42254-A6000-K315	25				

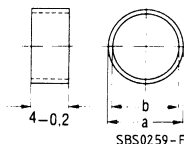
Screened housing

9 contacts	pebble grey RAL 7032	V42254-A6000-G109	25				
15 contacts		V42254-A6000-G115	25				
25 contacts		V42254-A6000-G125	15				
37 contacts		V42254-A6000-G137	15				
50 contacts		V42254-A6000-G150	15				
▼ 15 contacts	black RAL 9005	V42254-A6000-G315	25				

Variable housing accessories

Contact sleeves

For supporting the cable screen braiding



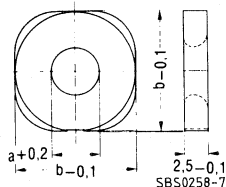
Material:
AlMg 3 F25

Dimensions		For screen braiding outer diameter	Ordering code	PU	Price each			
a	b				Pcs/ea	1 +	100 +	500 +
mm		mm						
▼ 4	3	2,0 ... 2,8	V42254-A6104-L1	100				
5	4	2,9 ... 3,8	V42254-A6105-L1	100				
6	5	3,9 ... 4,8	V42254-A6106-L1	100				
▼ 7	6	4,9 ... 5,8	V42254-A6107-L1	100				
8	7	5,9 ... 6,8	V42254-A6108-L1	100				
▼ 9	8	6,9 ... 7,8	V42254-A6109-L1	100				
10	9	7,9 ... 8,8	V42254-A6110-L1	100				
12	11	9,9 ... 10,8	V42254-A6112-L1	100				

Subminiature Connectors SBM 383

Housing Accessories

Cable bushings

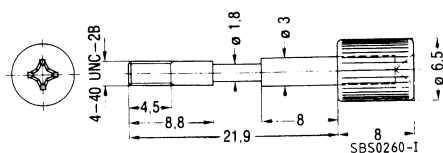


Color grey

Material:
PBTP GF 30

For housing size (no. of contacts)					Dim. a b mm		For line outer diameter mm	Ordering code	PU Pcs/ea	Price each		
9	15	25	37	50						1 +	100 +	500 +
×					5	12,9	4,2 ... 4,9	V42254-A6205-L1	100			
×	×				6	12,9	5,0 ... 5,9	V42254-A6206-L1	100			
×	×	×	×		7	12,9	6,0 ... 6,9	V42254-A6207-L1	100			
×	×	×	×	×	8	12,9	7,0 ... 7,9	V42254-A6208-L1	100			
×	×	×	×	×	9	12,9	8,0 ... 8,9	V42254-A6209-L1	100			
	×	×	×	×	11	12,9	10,0 ... 10,9	V42254-A6211-L1	100			
		×	×	×	10	16,9	9,0 ... 9,9	V42254-A6210-L50	100			
			×	×	13	16,9	12,0 ... 12,9	V42254-A6213-L50	100			

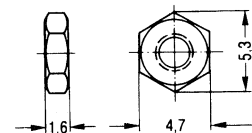
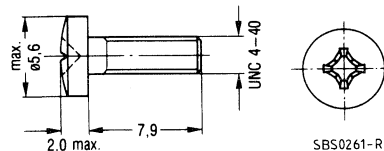
Knurled screw¹⁾ for screw locking



With plastic head (grey or black)
Material: 9 S MnPb 28 K-3, nickel-plated surface
injection-molded head of PBTP GF 30
or with solid-metal head
Material: X10CrNi S189

- ¹⁾ 1 screw is required for housings with 9 contacts
2 screws are required for housings with 15, 25,
37 and 50 contacts

Screw with nut for connector mounting without locking



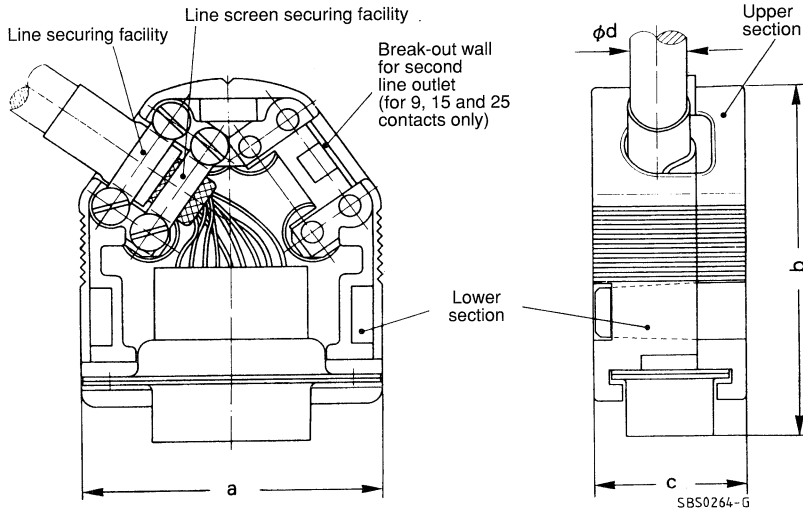
Material: screw as per MS 51957,
stainless steel, surface passivated

Item	Ordering code	PU	Price each/per set		
		Pcs or sets/ea	1 +	100 +	500 +
Knurled screw					
Grey plastic	V42254-A112-V9	10 pcs			
Black plastic	V42254-A112-V109	10 pcs			
Metal	V42254-A262-V9	10 pcs			
Set of screws comprising					
2 screws and 2 nuts	V42254-A162-V1	10 sets			

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Subminiature Connectors SBM 383 Housings

For connectors with soldering or crimp terminal
Housings for connectors with 9 and 15 contacts (see outline drawing) as well as for connectors with 25, 37 and 50 contacts (without outline drawing)

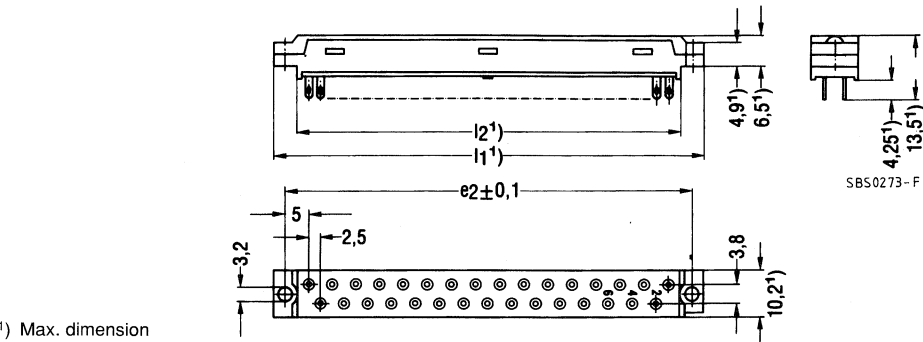


For connectors with	Version	Ordering code	PU	Price each		
			Pcs/ea	1 +	100 +	500 +
9 contacts	screened	C26111-B19-A105	1			
9 contacts	unscreened	C26111-B19-A205	1			
15 contacts	screened	C26111-B19-A106	1			
15 contacts	unscreened	C26111-B19-A206	1			
25 contacts	screened	C26111-B19-A101	1			
25 contacts	unscreened	C26111-B19-A201	1			
37 contacts	screened	C26111-B19-A102	1			
50 contacts	screened	C26111-B19-A103	1			

Note: only available until 4/92

Pin Connectors PC 617

Female connectors in acc. with DIN 41 617, design L, with solder lugs
13, 21 and 31 contacts



1) Max. dimension

No. of contacts	Dimensions in mm		
	e2	l1	l2
13	40	45,8	34,2
21	60	65,8	54,2
31	85	90,8	79,2

Contact surface
Current rating per contact
(at 20 °C ambient temperature)
Operating voltage

Contact resistance
Insulation resistance
Temperature range

Ag
5 A

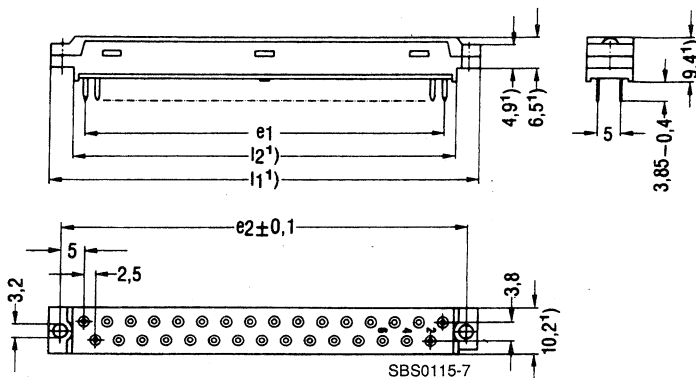
Au + Pd
5 A
(4 A performance level 3)
depends on safety regulations
for the equipment used
 $\leq 15 \text{ m}\Omega$
 $\geq 10^6 \text{ M}\Omega$
 $- 55 \dots + 125 \text{ }^\circ\text{C}$

Service life Insertion/ removal cycles (≥)	Performance level	No. of con- tacts	Ordering code	PU	Price each				
				Pcs/ea	1 +	100 +	500 +		
Silver-plated contact surface									
500	1	13	C42334-A52-A41	20					
500	1	21	C42334-A54-A41	15					
500	1	31	C42334-A56-A41	10					
Gold-plated contact surface									
400	2	13	C42334-A52-A42	20					
400	2	21	C42334-A54-A42	15					
400	2	31	C42334-A56-A42	10					
50	3	31	C42334-A56-A642	10					

Pin Connectors PC 617

Female connectors in acc. with DIN 41 617, design M, with straight solder pins
 Suitable for screwing onto mounting rails
 31 contacts

2,5 mm center spacing



1') Max. dimension

For characteristics refer to page 576

No. of contacts	Dimensions in mm			
	e1	e2	l1	l2
13	30	40	45,8	34,2
21	50	60	65,8	54,2
31	75	85	90,8	79,2

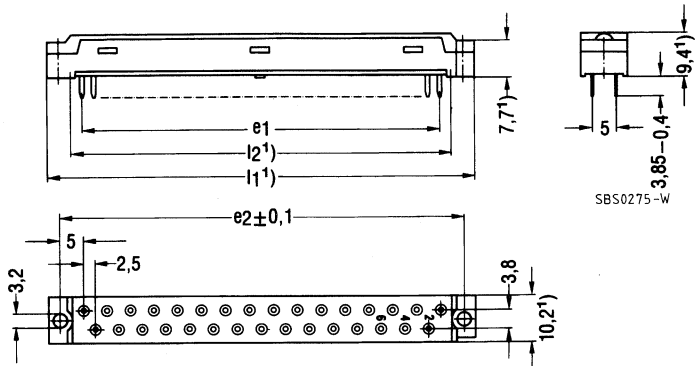
Service life Insertion/ removal cycles (≥)	Performance level	No. of con- tacts	Ordering code	PU	Price each				
					Pcs/ea	1 +	100 +	500 +	
Silver-plated contact surface									
500	1	31	C42334-A56-A61	10					
Gold-plated contact surface									
400	2	31	C42334-A56-A62	10					

Pin Connectors PC 617

Female connectors in acc. with DIN 41617, design N, with straight solder pins

With fixing flanges extending down, for mounting on PC boards
13, 21 and 31 contacts

2,5 mm center spacing



1) Max. dimension

For characteristics refer to page 576

No. of contacts	Dimensions in mm			
	e1	e2	l1	l2
13	30	40	45,8	34,2
21	50	60	65,8	54,2
31	75	85	90,8	79,2

Service life Insertion/ removal cycles (≥)	Perfor- mance level	No. of con- tacts	Ordering code	PU Pcs/ea	Price each			
					1 +	100 +	500 +	

Silver-plated contact surface

500	1	13	C42334-A52-A63	20				
500	1	21	C42334-A54-A63	15				
500	1	31	C42334-A56-A63	10				

Gold-plated contact surface

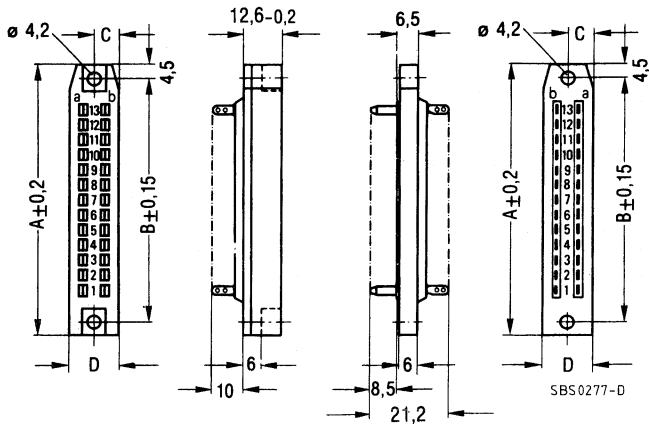
400	2	13	C42334-A52-A64	20				
400	2	21	C42334-A54-A64	15				
400	2	31	C42334-A56-A64	10				

Connectors DIN 41618 and DIN 41622

Two-Part Connectors RP 618

Blade-contact and female connectors in acc. with DIN 41618

With solder lugs for conventional wiring
20, 26 and 39 contacts



Size	No. of contacts	Dimensions in mm			
		A	B	C	D
3	20	71	62	7,5	15 ± 0,1
4	26	83	74	7,5	15 ± 0,1
5*)	39	83	74	10	20 ± 0,15

*) 3-row dielectric

Thermoplastic material, glass-fiber reinforced
for temperature range
Contact surface
Version

– 55 ... + 125 °C silver-pl. gold-pl. complying with DIN 41618	– 55 ... + 155 °C silver-pl. gold-pl. complying with VG 95322
---	--

Current rating per contact
(at 20 °C ambient temperature)
Operating voltage (as per VDE 0110, group A)
Contact resistance
Insulation resistance
Service life

6 A	4,5 A	8 A	6 A
300 Vdc/250 Vac rms			
≤ 5 mΩ	≤ 8 mΩ	≤ 5 mΩ	≤ 8 mΩ
≥ 10 ⁶ MΩ			
≥ 1000 insertion/removal cycles			

Connectors DIN 41618 und DIN 41622

Two-Part Connectors RP 618

Item Connector	No. of con.	Insulating material for temperature range		Ordering code	PU Pcs/ea	Price each				
		- 55 ... + 125 °C	- 55 ... + 155 °C			1 +	50 +	100 +	500 +	

Silver-plated contact surface

Female	20	x		C42334-A47-A4	10					
Blade	20		x	C42334-A47-A5	10					
Female	20		x	C42334-A47-A6	10					
Blade	26	x		C42334-A48-A3	10					
Female	26	x		C42334-A48-A4	10					
Female	26		x	C42334-A48-A6	10					
Blade	39	x		C42334-A49-A3	10					
Female	39	x		C42334-A49-A4	10					
Blade	39		x	C42334-A49-A5	10					
Female	39		x	C42334-A49-A6	10					

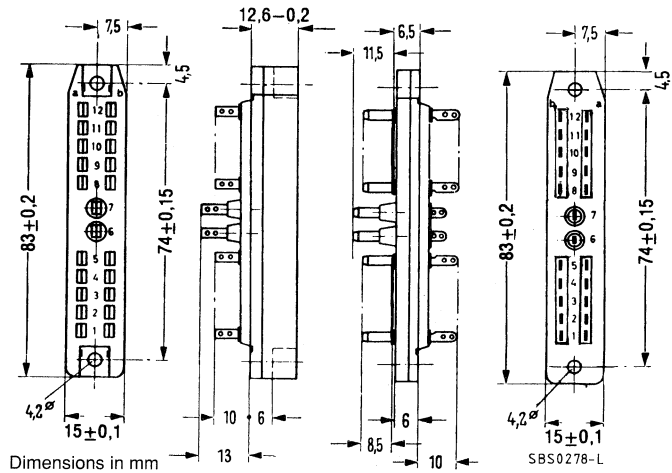
Gold-plated contact surface

Blade	26	x		C42334-A48-A13	10					
Female	26	x		C42334-A48-A34	10					
Blade	26		x	C42334-A48-A15	10					
Female	26		x	C42334-A48-A36	10					
Blade	39	x		C42334-A49-A13	10					
Female	39	x		C42334-A49-A34	10					
Blade	39		x	C42334-A49-A15	10					
Female	39		x	C42334-A49-A36	10					

Connectors DIN 41618 and DIN 41622
Two-Part Connectors RP 618

Blade-contact and female connectors with high-voltage contacts

With solder lugs for conventional wiring
20 contacts + 2 high-voltage contacts



Size 4

Thermoplastic material, glass-fiber reinforced
Contact surface
Version

silver-plated | gold-plated
complying with VG 95322

Current rating per contact
(at 20 °C ambient temperature)
Operating voltage (as per VDE 0110, group A)
for high-voltage contacts 6 and 7
Contact resistance
Insulation resistance
Service life
Temperature range

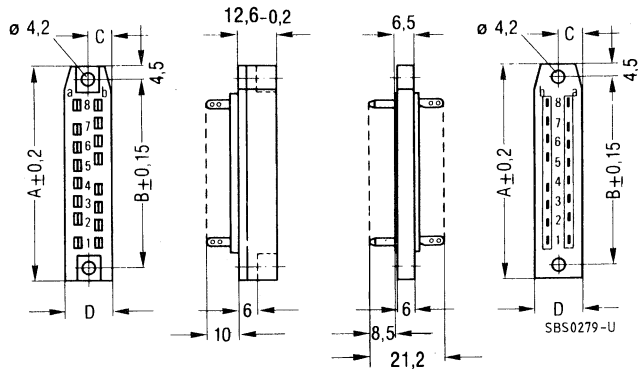
8 A | 6 A
300 Vdc/250 Vac rms
1,2 kVdc/1,0 kVac rms
≤ 5 mΩ | ≤ 8 mΩ
≥ 10⁶ MΩ
≥ 1000 insertion/removal cycles
- 55 ... + 155 °C

Item	No. of contacts	Ordering code	PU	Price each			
Connector			Pcs/ea	1 +	50 +	100 +	500 +
Silver-plated contact surface							
Blade	20 + 2	C42334-A220-A5	10				
Female	20 + 2	C42334-A220-A6	10				
Gold-plated contact surface							
Blade	20 + 2	C42334-A220-A15	10				
Female	20 + 2	C42334-A220-A36	10				

Connectors DIN 41618 and DIN 41622
Two-Part Connectors RP 622

Blade-contact and female connectors in acc. with DIN 41622

With solder lugs for conventional wiring
8, 12, 16, 20 and 30 contacts



Size	No. of contacts	Dimensions in mm			
		A	B	C	D
1	8	47	38	7,5	15 ± 0,1
2	12	59	50	7,5	15 ± 0,1
3	16	71	62	7,5	15 ± 0,1
4	20	83	74	7,5	15 ± 0,1
5*)	30	83	74	10	20 ± 0,15

*) 3-row dielectric

Thermoplastic material, glass-fiber reinforced
for temperature range
Contact surface
Version

– 55 ... + 125 °C
silver-pl. | gold-pl.
complying with
DIN 41622

– 55 ... + 155 °C
silver-plated
complying with
VG 95322

Current rating per contact
(at 20 °C ambient temperature)
Operating voltage (as per VDE 0110, group A)
Contact resistance
Insulation resistance
Service life
Temperature range

8 A	6 A	10 A
450 Vdc/380 Vac rms		
≤ 5 mΩ	≤ 8 mΩ	≤ 5 mΩ
≥ 10 ⁶ MΩ		
≥ 1000 insertion/removal cycles		
– 55 ... + 125 °C	– 55 ... + 155 °C	

Connectors DIN 41618 and DIN 41622

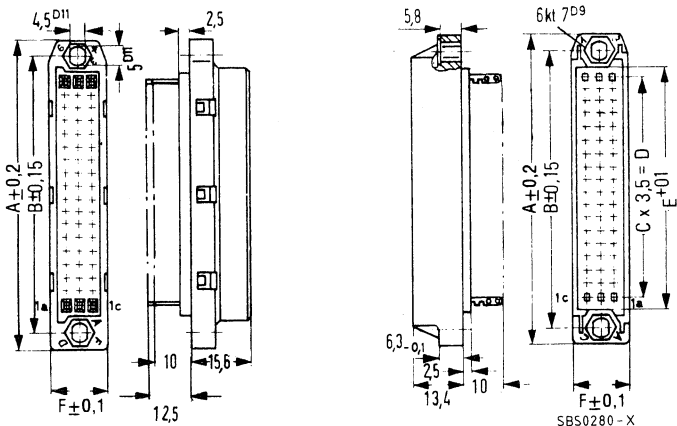
Two-Part Connectors RP 622

Item	No. of con.	Insulating material for temperature range		Ordering code	PU	Price each				
Conne- tor		- 55 ... + 125 °C	- 55 ... + 155 °C		Pcs/ea	1 +	50 +	100 +	500 +	
Silver-plated contact surface										
Blade	8	×		C42334-A40-A3	10					
Female	8	×		C42334-A40-A4	10					
Blade	12	×		C42334-A41-A3	10					
Female	12	×		C42334-A41-A4	10					
Blade	16	×		C42334-A42-A3	10					
Female	16	×		C42334-A42-A4	10					
Blade	20	×		C42334-A43-A3	10					
Female	20	×		C42334-A43-A4	10					
Blade	30	×		C42334-A44-A3	10					
Female	30	×		C42334-A44-A4	10					
Blade	30		×	C42334-A44-A5	10					
Gold-plated contact surface										
Blade	30	×		C42334-A44-A13	10					
Female	30	×		C42334-A44-A34	10					

Connectors DIN 41618 and DIN 41622
Two-Part Connectors RP 300

Blade-contact and female connectors

(Mounting conditions and dimensions in acc. with DIN 41618 and DIN 41622)
With solder lugs for conventional wiring
21, 33, 42, 54 and 72 contacts



Size	No. of contacts	Dimensions in mm					
		A	B	C	D	E	F
1	21	47	38	6	21	27,2	15
2	33	59	50	10	35	41,2	15
3	42	71	62	13	45,5	51,7	15
4	54	83	74	17	59,5	65,1	15
5*)	72	83	74	17	59,5	65,1	20

*) 4-row dielectric

Current rating per contact (at 20 °C) 4,5 A
Contact resistance ≤ 15 mΩ
Temperature range – 55 ... + 125 °C

For further data
refer to page 581

Item	No. of con.	Service life	Ordering code	PU	Price each				
Conne- ctor		Insertion/ removal/cycles (≥)		Pcs/ea	1 +	50 +	100 +	500 +	

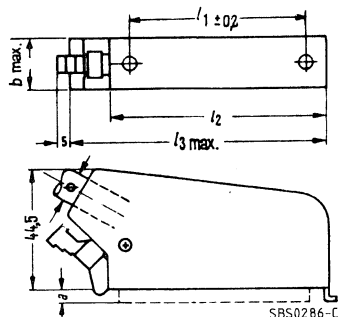
Gold-plated contact surface

Blade	21	1000	C42334-A300-A13	10					
Female	21	1000	C42334-A300-A14	10					
▼ Blade	33	1000	C42334-A301-A13	10					
▼ Female	33	1000	C42334-A301-A14	10					
Blade	42	1000	C42334-A302-A13	10					
Female	42	1000	C42334-A302-A14	10					
Blade	54	1000	C42334-A303-A13	10					
Female	54	1000	C42334-A303-A14	10					
Blade	72	1000	C42334-A304-A13	10					
Female	72	1000	C42334-A304-A14	10					
Blade	72	200	C42334-A304-A23	10					

Connectors DIN 41618 and DIN 41622 Accessories

Cable connector housing, diagonal cable entry, optionally with locking facility

Plastic version, pumice grey, fully insulated

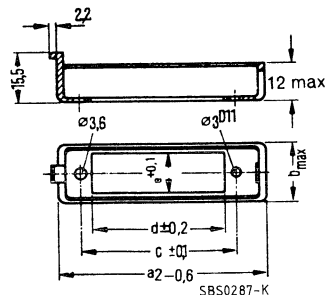


Size	Dimensions in mm				
	l_1	$l_2 \text{ max.}$	l_3	b	Cable $\varnothing \text{ max.}$
1	38	54,5	70	18,2	12
2	50	66,5	82	18,2	12
3	62	78,5	94	18,2	12
4	74	90,5	106	18,2	12
5	74	90,5	106	23,2	16

Dimension a 4,5 mm for blade-contact connector
3 mm for female connector

Locking tray

Glass-fiber reinforced polycarbonate, pumice grey



Size	Dimensions in mm				
	a_2	b	c	d	e
1	54,4	18,1	38	31	13
2	66,4	18,1	50	43	13
3	78,4	18,1	62	55	13
4	90,4	18,1	74	67	13
5	90,4	23,1	74	67	18

Note: The locking lever (not shown)
is fixed to the housing subsequent to
mounting

Size	For rack connectors			Ordering code	PU	Price each			
	No. of contacts					Pcs/ea	1 +	100 +	500 +
	RP618	RP622	RP300						

Cable connector housing without locking facility (without rack connector and matching parts)

1	10	8	21	C42334-A228-A761	1			
2	—	12	33	C42334-A228-A762	1			
3	20	16	42	C42334-A228-A763	1			
4	26	20	54	C42334-A228-A764	1			
5	39	30	72	C42334-A228-A765	1			

Locking lever

—				C42334-A228-B78	1			
---	--	--	--	-----------------	---	--	--	--

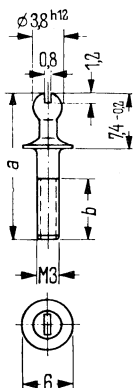
Locking tray

1	10	8	21	C42334-A228-C161	1			
2	—	12	33	C42334-A228-C162	1			
3	20	16	42	C42334-A228-C163	1			
4	26	20	54	C42334-A228-C164	1			
5	39	30	72	C42334-A228-C165	1			

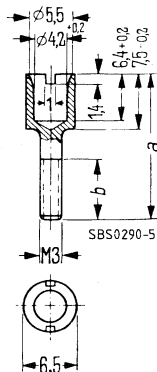
Connectors DIN 41618 and DIN 41622 Accessories

Matching parts

Pin

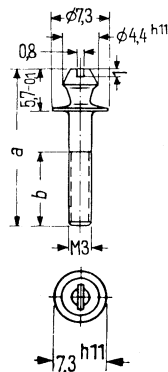


Socket

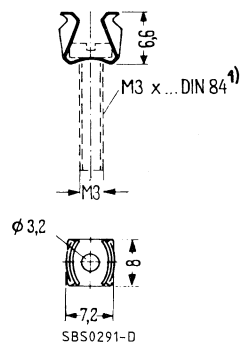


Retaining devices

Ball-head pin



Latching spring



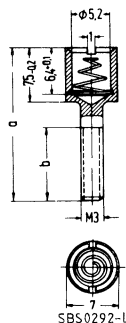
Note:

Dimension a depends on the thickness of the mounting plate or on whether nuts are used on through-holes

1) Mounting hardware:

Machine screws M 3 x ... DIN 84; recommended lengths: 10 mm, 12 mm and 15 mm (commercially available). Latching spring also available with screw M 3, 12 mm long.

Grounding socket



Item	Ordering code	PU Pcs/ea	Dimensions in mm		Price each		
			a	b	1 +	100 +	500 +
Pin	C42334-A100-C50	10	17,0	8			
Pin	C42334-A100-C51	10	19,5	8			
Pin	C42334-A100-C52	10	23,0	10			
Socket	C42334-A100-C55	10	17,0	8			
Socket	C42334-A100-C56	10	19,5	8			
Socket	C42334-A100-C57	10	23,0	10			
Ball-head pin	C42334-A100-C62	10	21,2	8			
Ball-head pin	C42334-A100-C61	10	17,7	10			
Latching spring	C42334-A100-C70	10	—	—			
Latching spring with screw M 3, 12 mm long	C42334-A100-B16	10	—	—			
Grounding socket	C42334-A100-B11	10	19,5	8			

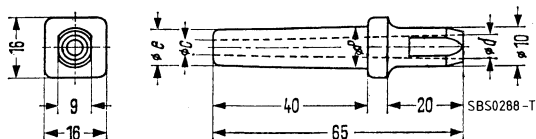
Connectors DIN 41618 and DIN 41622 Accessories

Cable sleeves

Material: PVC, black

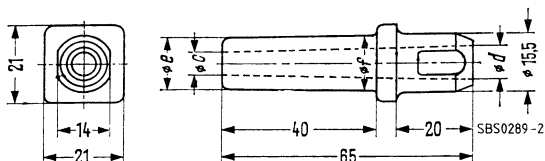
For cable connector housings with diagonal cable entry, in conjunction with plastic jacketed cable. Suitable for sizes 1 to 5.

Sizes 1 to 4



Size	Dimensions in mm			
	c	d	e	f
1 to 4	7	8	10	12
5	10,5	11,5	14	15,5

Size 5



Polarizing elements

In particular for cable connectors RP 300

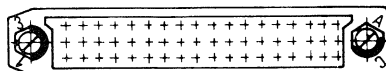
The notch on the polarizing element points to the letters and numbers on the dielectric.

Max. 36 polarizing positions

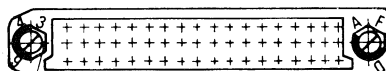
Securing e.g. by machine screw AM 3 x 12 DIN 84-5,8

Material: metal

Example: Blade-contact connector

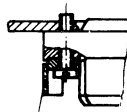


Example: Female connector

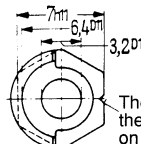
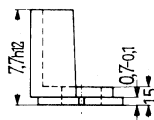


Notch on polarizing element

Mounting plate



Polarizing element



SBS0293-U

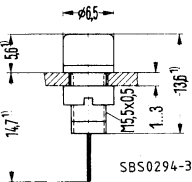
Item	Ordering code	PU	Price each			
		Pcs/ea	1 +	50 +	100 +	500 +
Cable sleeve for sizes 1 to 4	C42334-A100-C42	1				
Cable sleeve for size 5	C42334-A100-C45	1				
Polarizing element	C42334-A303-C12	20				

Connectors for Measuring, Test and Patch Panel Applications

Pin Connectors

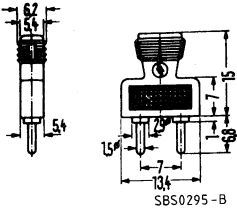
Pin connectors, 1 contact

Panel socket



Mounting hole
 ∅ 5,7 mm

U-connector



Dimensions in mm

Silver-plated contact surface	
Contact resistance with mating connector, initial value	≤ 10 mΩ
Insulation resistance; initial value	≥ 10 ⁶ MΩ
Operating voltage (recommended)	110 Vdc/125 Vac
Operating current (at + 20 °C ambient temperature)	≤ 4 A
Operating temperature range	– 25 °C ... + 70 °C

Item	Color	Ordering code	PU	Price each				
			Pcs/ea	1 +	100 +	500 +		
Panel socket	black	C42334-A96-A41	100					
Panel socket	red	C42334-A96-A43	100					
U-connector	black	C42334-A96-A211	10					

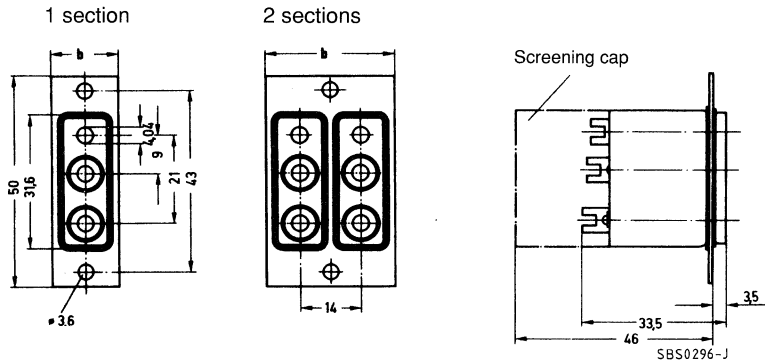
Connectors for Measuring, Test and Patch Panel Applications

Banana Plug and Cable Connectors

Banana plug connectors, symmetrically screened

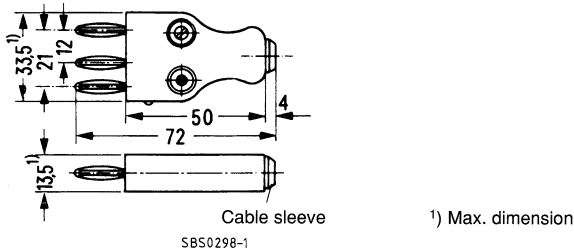
Socket strips

for installation in front panels with max. 2 socket units and screened housing
Solder lugs for conventional wiring
2-hole securing



Version	Dimensions in mm b
1 section	16
2 sections	30

Cable connector



Item	Ordering code	PU Pcs/ea	Price each
1-section socket strip*)	C42334-A176-A11	10	
2-section socket strip*)	C42334-A176-A21	10	
Cable connector, black	C42334-A282-A1	10	
Cable sleeve for cable connector	C42334-A282-C11	10	

*) Without screening cap

Coaxial Connectors

General; Series 1,0/2,3

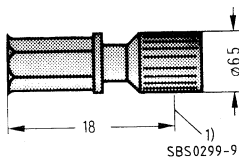
Plugs and jacks of different coupling type can be used together, if they have the same size. The design is based on the pin and socket principle, i.e. the inner and outer conductors have radially spring mounted contacts of gold-plated beryllium copper

Note: For further types refer to data book "RF Connectors"

Series 1,0/2,3 (50 Ω and 75 Ω)

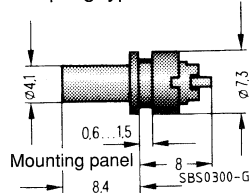
Outline drawing 1

Cable plug
(50 Ω and 75 Ω)
Coupling type A



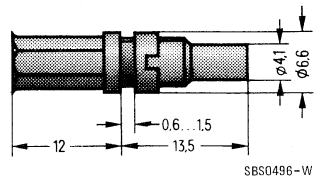
Outline drawing 2

Bulkhead jack with
solder connection (50 Ω)
Coupling type C



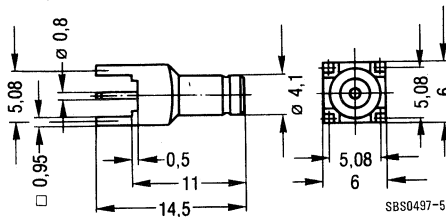
Outline drawing 3

Bulkhead jack with
cable connection (75 Ω)
Coupling type A



Outline drawing 4

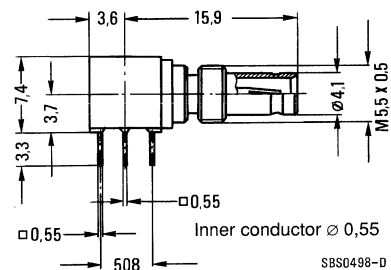
Jack with PC board connection
(50 Ω)
Coupling type C



Pitch 2,54 mm

Outline drawing 5

Bulkhead angle jack 90 ° with
PC board connection (50 Ω)
Coupling types A, C



Dimensions in mm

Coupling type A: for push-screw connection
Coupling type C: for slide-in connection

1) Detent for jack

Out-line drawing	Cable $\varnothing$ (mm)	Type of cable	Ordering code	PU	Price each			
					Pcs/ea	1 +	100 +	500 +
1	2,6	RG 316/U (50 Ω)	C42334-A285-A162	1				
1	2,67	RG 179 B/U (75 Ω)	V23614-A102-A57	1				
2			C42334-A285-A602	1				
▼ 3	2,67	RG 179	V23614-A602-G57	1				
▼ 4			V23600-A1027-C1	100				
▼ 5			V23600-A1227-G1	1				

Coaxial Connectors

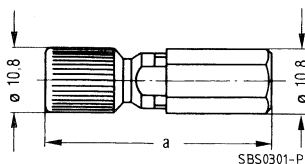
Series 1,6/5,6 mS

Series 1,6/5,6 mS (75 Ω)

The connectors of series 1,6/5,6 mS are a follow-on development of series 1,6/5,6 specified by DIN 47295. They can be used up to a frequency of 8 GHz. The connectors 1,6/5,6 mS are fully compatible with the predecessor series 1,6/5,6 in the known frequency range.

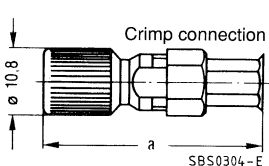
Outline drawing 1

Cable plug
Coupling type A
C42334-A75-A12/A18



Outline drawing 2

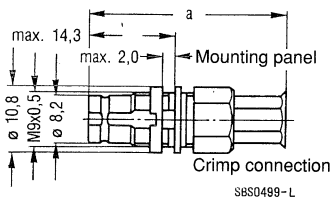
Cable plug
Coupling type A
C23612-A102-A45/A49



Ordering code	Dim. a mm
C42334-A75-A12 -A75-A18	32,7 35,5
V23612-A102-A45 -A102-A49	32,5 35,6

Outline drawing 3

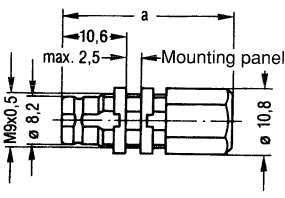
Bulkhead jack with
cable connection
Coupling types A, B



Dimension a = 29,8 mm

Outline drawing 4

Bulkhead jack with
cable connection for withdrawable unit design
Coupling types B, C



Dimension a = 28,1 mm

Coupling type A: for push-screw connection

Coupling type B: for snap-on connection

Coupling type C: for slide-in connection

Out- line draw- ing	Cable ∅ (mm)	Type of cable	Ordering code	PU	Price each			
					Pcs/ea	1 +	100 +	500 +
1	6,1	2YCY 0,7/4,4	C42334-A75-A12	1	13,23	9,26	7,94	
	6,25	RG 59 B/U						
1	6,2	2YC(mS)CY 0,5/3,0	C42334-A75-A18	1	13,23	9,26	7,94	
	5,0	2YCCY 0,4/2,5						
2	5,0	2YC(mS)CY 0,4/2,5	V23612-A102-A45	1	11,83	8,28	7,10	
	5,0	2YCCY 0,4/2,5	V23612-A102-A49	1	11,83	8,28	7,10	
	5,0	2YC(mS)CY 0,4/2,5						
2	6,1	2YCY 0,7/4,4	V23612-A102-A49	1	11,83	8,28	7,10	
▼ 3	3,3	02XSCC(St)6Y 0,37/1,6	V23612-A602-G73	1	10,60	7,42	6,36	
▼ 4	5,0	2YC(mS)CY 0,4/2,5	C42334-A80-A60	1	9,66	6,76	5,80	
	5,0	2YCCY 0,4/2,5						

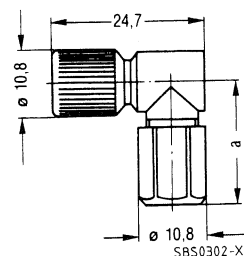
Coaxial Connectors

Series 1,6/5,6 mS

Series 1,6/5,6 mS (75 Ω)

Outline drawing 5

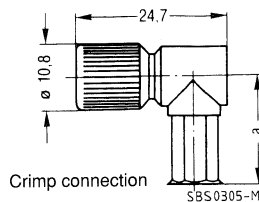
Cable angle plug
Coupling type A



Dimension a = 18,5 mm

Outline drawing 6

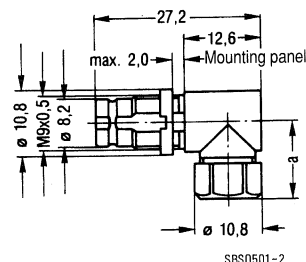
Cable angle plug
Coupling type A



Dimension a = 15 mm

Outline drawing 7

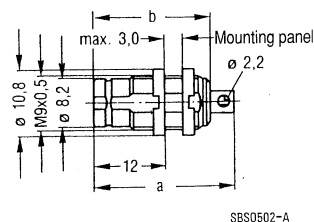
Bulkhead jack with
angle cable connection
Coupling types A, B



Dimension a = 13 mm

Outline drawing 8

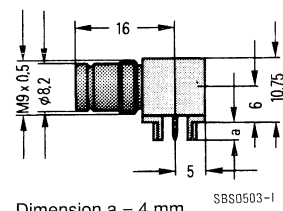
Bulkhead jack with
solder connection
Coupling types A, B, C



Dimension a = 23,5 mm
b = 19,8 mm

Outline drawing 9

Bulkhead angle jack 90°
with PC board connection
Coupling types A, B



Dimension a = 4 mm
Pitch 2,54 mm

Out-line drawing	Cable Ø (mm)	Type of cable	Ordering code	PU	Price each				
					Pcs/ea	1 +	100 +	500 +	
5	5,0	2YCCY 0,4/2,5	C42334-A77-A18	1					
6	5,0	2YC(mS)CY 0,4/2,5	V23612-A202-A45	1					
7	5,0	2YCCY 0,4/2,5	C42334-A78-A60	1					
8	5,0	2YC(mS)CY 0,4/2,5	C42334-A76-A14	1					
9	5,0	2YC(mS)CY 0,4/2,5	V23612-A1227-A1	40					

Switches and Pushbuttons

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Switches and pushbuttons for printed circuits

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Keytops for STB 21 and STB 11	611
Keylock switches SPC 266 and SPC 758	612

Switches and pushbuttons for conventional wiring

Multi-position rotary switches 41 mm × 54 mm	614
Multi-position rotary switch 28 mm × 39 mm	615
Multi-position rotary switches ø 17 mm	616
Multi-position rotary switch ø 23 mm	617
Kits for multi-position rotary switches	618
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Note: In this chapter packing units (PU) are quoted in addition to the relevant ordering codes. Ordering the quantities specified as packing units has the following advantages:

- You receive original packings from the manufacturing plants.
- All products contained in a packing unit stem from one production lot.
- Mistakes or damage which may arise from transferring the products from original packing to delivery packing are excluded.

For these reasons we recommend to order the minimum quantity of one packing unit.

The contact surfaces of many products are plated with noble metals. A surcharge, depending on the noble metal quotation of the day, may therefore be added to the stated prices.

▼ Newly included in this edition

Extended range of dual-in-line switches A3000, keylock switches SPC 266 and key switches

Further technical literature

Data Book "Switches and Pushbuttons", A23999-A530-A980-★-7604

Slide Switches A68 for Printed Circuits

Slide switches with 1 or 2 changeover contacts

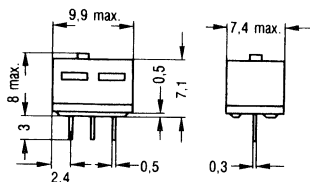
Dust-protected or immersion-washproof (version actuated from the top)

Switching mode: break

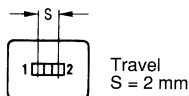
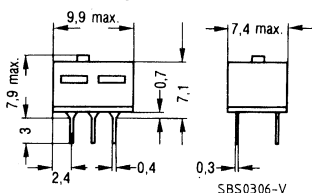
Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803

Actuated from the top

With 1 changeover contact

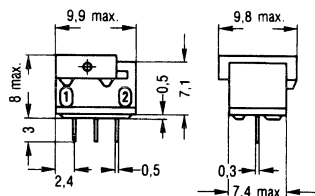


With 2 changeover contacts

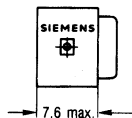
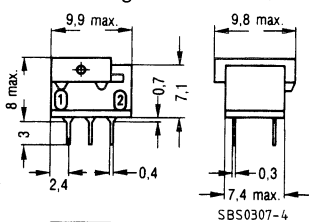


Actuated from the top or at the side

With 1 changeover contact

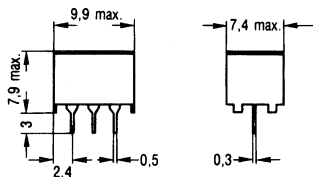


With 2 changeover contacts

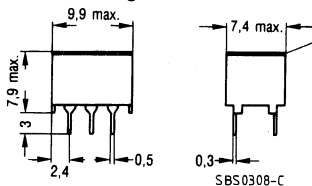


Actuated from the top (immersion-washproof)

With 1 changeover contact



With 2 changeover contacts



Shown without sealing film

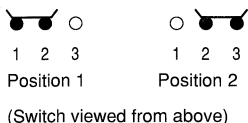


Travel
S = 2 mm

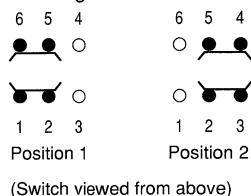
Dimensions in mm

Slide Switches A68 for Printed Circuits

1 changeover contact



2 changeover contacts



Contact materials

Stationary contact: nickel-plated and gold-plated
Wiping contact: nickel-plated and gold-plated

Voltage rating

Current rating

Switch capacity

Contact resistance (millivolt method); initial value

Insulation resistance; initial value

Ambient temperature range

≤ 24 Vdc/ac

≤ 0,3 Adc/ac

≤ 3 VA*

≤ 40 mΩ

≥ 10⁵ MΩ

– 25 ... + 85 °C

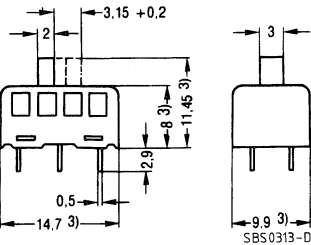
* up to 100 switching cycles

Slide switch A68	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
With 1 changeover contact, dust-protected							
Actuated from the top	C42315-A68-A3	80					
Actuated also at the side	C42315-A68-A4	80					
With 1 changeover contact, immersion-washproof							
Actuated from the top	C42315-A68-A33	80					
With 2 changeover contacts, dust-protected							
Actuated from the top	C42315-A68-A1	80					
Actuated also at the side	C42315-A68-A2	80					
With 2 changeover contacts, immersion-washproof							
Actuated from the top	C42315-A68-A31	80					

Slide Switches A60 for Printed Circuits

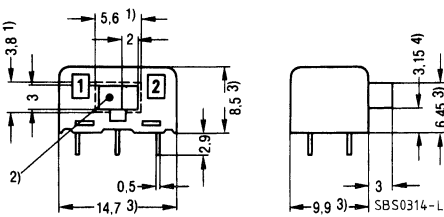
Slide switches with 2 changeover contacts
 Immersion-washproof
 Switching mode: break
 Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803

Actuated from the top

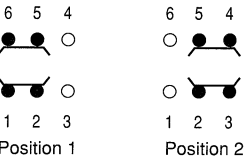


- 1) Minimum front panel cut-out
- 2) Red indicating dot, optional
- 3) Maximum dimension
- 4) Minimum dimension

Actuated at the side



Dimensions in mm



(Switch viewed from above)

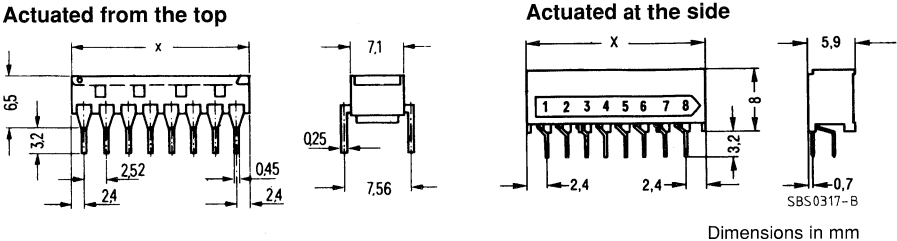
Contact materials
 Stationary contact: gold-plated
 Wiping contact: nickel-plated and gold-plated

Voltage rating ≤ 60 Vdc/ac
Current rating $\leq 0,5$ Adc/ac
Switch capacity ≤ 20 W
Contact resistance (millivolt method) ≤ 40 m Ω
Insulation resistance; initial value $\geq 10^5$ M Ω
Ambient temperature range $- 25 \dots + 85$ °C

Slide switch A60	Ordering code	PU	Price each			
			Pcs/ea	1 +	100 +	500 +
Actuated from the top	C42315-A60-A24	80				
Actuated at the side	C42315-A60-A25	80				
Actuated at the side,with red indicating dot	C42315-A60-A32	80				

Dual-in-Line Switches A1341 for Printed Circuits

Dual-in-line switches with 4, 5, 8 or 10 on/off switches
Single-pole; actuated individually and mutually independently
Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803



Contact materials
Stationary contact: nickel-plated and gold-plated
Wiping contact: nickel-plated and gold-plated

Voltage rating	≤ 24 Vdc/ac
Current rating	≤ 0,5 Adc/ac
Switch capacity	≤ 5 VA
Contact resistance (millivolt method); initial value	≤ 50 mΩ
Actuated from the top	≤ 70 mΩ
Actuated at the side	≥ 10 ⁵ MΩ
Insulation resistance; initial value	– 25 ... + 85 °C
Ambient temperature range	

Note: Switches are supplied in position "ON" (contact closed).

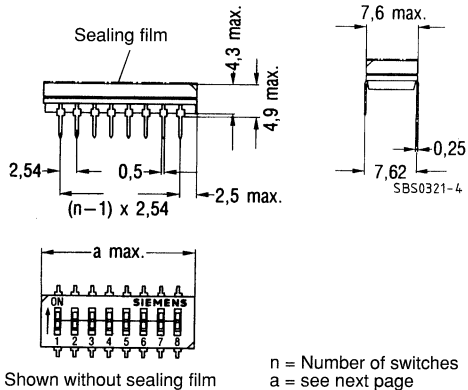
Number of switches	Dimension x	Ordering code	PU	Price each				
	mm		Pcs/ea	1 +	50 +	100 +	500 +	
Switches actuated from the top								
4	12,4	C42315-A1341-A1	60					
5	14,9	C42315-A1341-A2	50					
8	22,4	C42315-A1341-A4	30					
10	27,5	C42315-A1341-A5	25					
Switch actuated at the side								
8	22,4	C42315-A1341-A24	15					

Dual-in-Line Switches A3000 for Printed Circuits

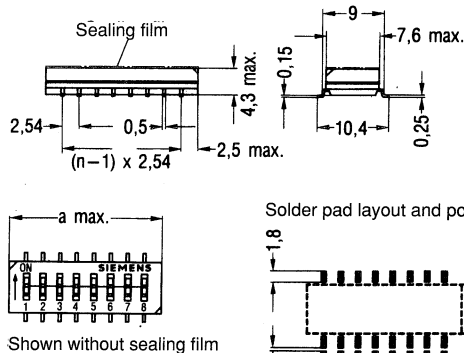
Dual-in-line switches with 3 to 10 on/off switches
Single-pole; actuated individually and mutually independently
Immersion-washproof

Plug-in version

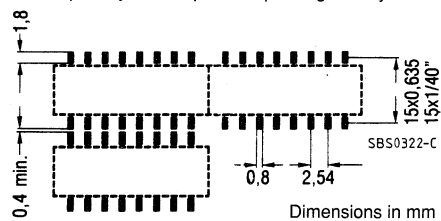
Tails suitable for center spacing
2,54 mm in acc. with DIN 40803



SMD version



Solder pad layout and possible packing density



Contact materials

Stationary contact: nickel-plated and gold-plated

Wiping contact: nickel-plated and gold-plated

Voltage rating

Current rating

Switch capacity

Contact resistance (millivolt method); initial value
after stressing

Insulation resistance; initial value

Ambient temperature range

≤ 24 Vdc/ac

≤ 0,5 Adc/ac

≤ 5 VA

≤ 50 mΩ

≤ 100 mΩ

≥ 10³ MΩ

- 25 ... + 85 °C

Dual-in-Line Switches A3000 for Printed Circuits

Number of switches	Dimension a	Ordering code	PU	Price each				
= n	mm		Pcs/ea	1 +	50 +	100 +	500 +	

Plug-in version, tails straight

▼ 3	9,88	V23756-A3003-A3	60					
4	12,42	V23756-A3003-A4	50					
5	14,96	V23756-A3003-A5	40					
▼ 6	17,50	V23756-A3003-A6	35					
▼ 7	20,04	V23756-A3003-A7	30					
8	22,58	V23756-A3003-A8	25					
▼ 9	25,12	V23756-A3003-A9	20					
10	27,66	V23756-A3003-A10	20					

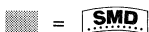
Plug-in version, tails straddled (15 °)

▼ 8	22,58	V23756-A3001-A8	25					
-----	-------	-----------------	----	--	--	--	--	--

SMD version

▼ 3	9,88	V23756-A3002-A3	60					
4	12,42	V23756-A3002-A4	50					
5	14,96	V23756-A3002-A5	40					
▼ 6	17,50	V23756-A3002-A6	35					
▼ 7	20,04	V23756-A3002-A7	30					
8	22,58	V23756-A3002-A8	25					
▼ 9	25,12	V23756-A3002-A9	20					
10	27,66	V23756-A3002-A10	20					

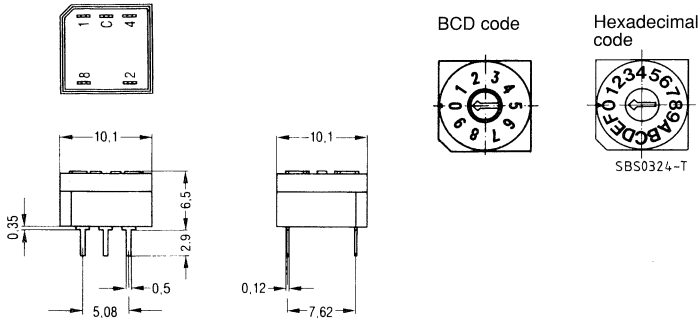
Note: Switches are supplied in position "ON" (contacts closed).



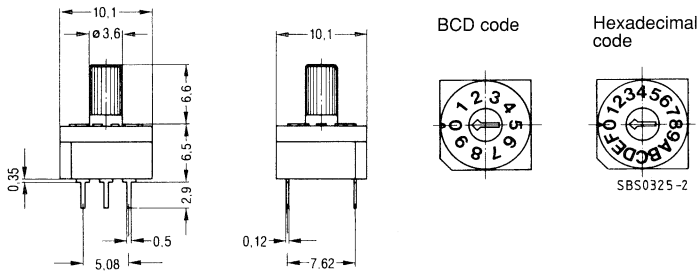
Single-Deck Rotary Switches A1353 for Printed Circuits

Single-deck rotary switches; BCD or hexadecimal coding (10 or 16 switch positions)
Without twist-lock feature
Switching mode: break
Immersion-washproof
Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803

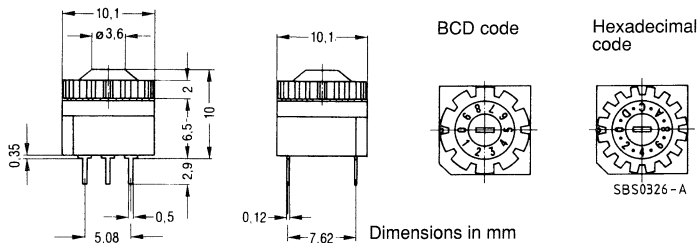
Actuated by screwdriver from the top



Actuated by screwdriver from the top or by hand (knurled shaft)



Actuated by screwdriver from the top or at the side or by hand (indexing disk)



Single-Deck Rotary Switches A1353 for Printed Circuits

Code table	Hexadecimal code															
	BCD code															
Terminal C connected to terminal	Switch position															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
	1															
	2		x	x		x	x		x			x	x		x	
	4					x	x	x	x					x	x	x
8									x	x	x	x	x	x	x	x

Contact materials

Switch wafer: nickel-plated and gold-plated

Contact head: nickel-plated and gold-plated

Voltage rating

≤ 24 Vdc/ac

Current rating

≤ 0,2 Adc/ac

Switch capacity

≤ 1,5 VA

Contact resistance (millivolt method); initial value
after stressing

≤ 60 mΩ

≤ 100 mΩ

Insulation resistance; initial value
after stressing

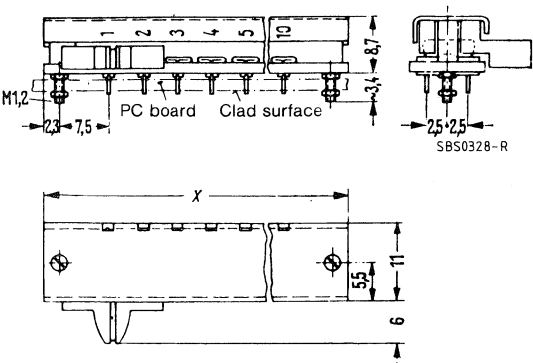
≥ 10⁵ MΩ

≥ 10² MΩ

Code	Ordering code	PU	Price each				
		Pcs/ea	1 +	50 +	100 +	500 +	
Switches actuated by screwdriver from the top							
BCD code	C42315-A1353-A1	120					
Hexadecimal code	C42315-A1353-A10	120					
Switches actuated by screwdriver from the top or by hand (knurled shaft)							
BCD code	C42315-A1353-A2	120					
Hexadecimal code	C42315-A1353-A11	120					
Switches actuated by screwdriver from the top, at the side or by hand (indexing disk)							
BCD code	C42315-A1353-A3	120					
Hexadecimal code	C42315-A1353-A12	120					

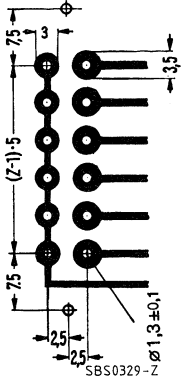
Slide Switches A46 for Printed Circuits

Slide switches with 2 to 5 switch positions; single-pole
Switching mode: mating



Switch with > 5 switch positions shown;
up to 10 switch positions available

Mounting holes and
printed conductors



Dimensions in mm

Contact materials
Stationary contact: nickel-plated and gold-plated
Wiping contact: nickel-plated and gold-plated

Voltage rating
Current rating
Switch capacity
Contact resistance (millivolt method); initial value
Insulation resistance; initial value
Ambient temperature range

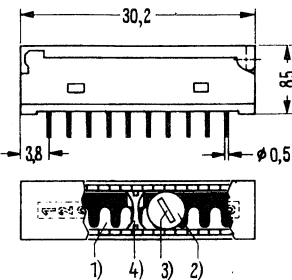
≤ 60 Vdc/ac
≤ 0.5 Adc/ac
≤ 20 VA
≤ 20 mΩ
≥ 10⁴ MΩ
− 25 ... + 60 °C

Number of switch positions	Dimension x mm	Ordering code	PU Pcs/ea	Price each				
				1 +	100 +	500 +		
2	24,6	V42264-K1-A1	10					
3	29,6	V42264-K1-A2	10					
4	34,6	V42264-K1-A3	10					
5	39,6	V42264-K1-A4	5					

Turn-Slide Switches A61 for Printed Circuits

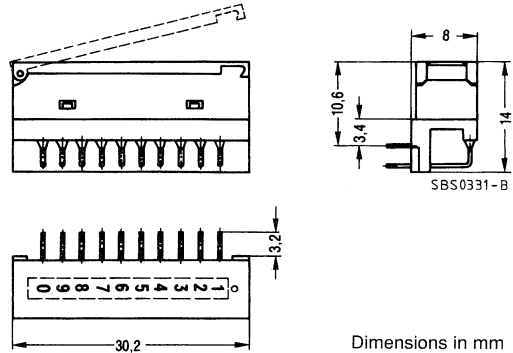
Turn-slide switches with 1, 2 or 3 switching elements; maximum of 10 switch positions; detent
Plug-in twist-lock features for limiting the rotary range
Switching mode: break
Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803

Actuated from the top
(straight soldering pins)



- 1) Rack
- 2) Switching element
- 3) Screwdriver slot (2,5 x 0,5 mm)
- 4) Twist-lock feature

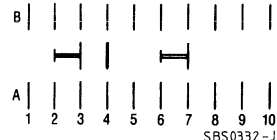
Actuated at the side
(angled soldering pins)



Dimensions in mm

Circuit diagram

e.g. switching elements in
positions 3 and 7,
twist-lock feature in position 4



Contact materials

Stationary contact: nickel wire, gold-plated

Wiping contact: nickel-plated and gold-plated

For switching ratings refer to page 604

Contact resistance (millivolt method); initial value

Actuated from the top/at the side

Insulation resistance; initial value

Ambient temperature range

$\leq 35/\leq 40 \text{ m}\Omega$
 $\geq 10^6 \text{ M}\Omega$
 $-40 \dots +85 \text{ }^\circ\text{C}$

Number of switching elements	Number of twist-lock features	Ordering code	PU	Price each			
			Pcs/ea	1 +	100 +	500 +	

Switches actuated from the top

1	—	V42264-V1501-D10	25				
1	2	V42264-V1501-D12	15				
2	3	V42264-V1502-D13	15				
3	3	V42264-V1503-D13	15				

Switch actuated at the side

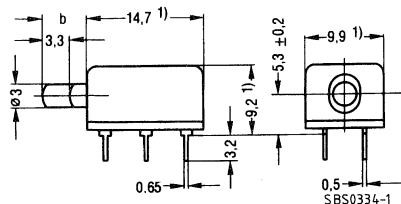
1	—	V42264-W1501-D10	15				
---	---	------------------	----	--	--	--	--

Pushbutton Switches A60 for Printed Circuits

Pushbutton switches with 2 changeover contacts

Switching mode: break

Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803



Dimensions in mm

Dimension b = 5,4 mm or 9,4 mm 1) Maximum dimension

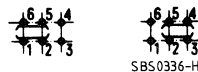
Minimum stroke for

reliable switch-over

3,1 mm

Overall stroke

3,5 mm



Idle
position

Actuated

(Switch viewed from above)

Contact materials

Stationary contact: nickel-plated and gold-plated

Wiping contact: nickel-plated and gold-plated

Voltage rating

≤ 60 Vdc/ac

Current rating

≤ 0,5 Adc/ac

Switch capacity

≤ 5 VA

Contact resistance (millivolt method); initial value

≤ 20 mΩ

Insulation resistance; initial value

≥ 10⁶ MΩ

Ambient temperature

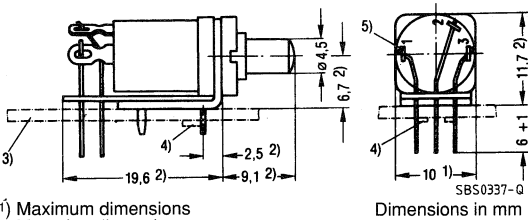
– 25 ... + 85 °C

Button length Dimension b	Ordering code	PU Pcs/ea	Price each				
			1 +	100 +	500 +		
5,4 mm	C42315-A60-A3	60					
9,4 mm	C42315-A60-A4	50					

Pushbutton Switch A9 for Printed Circuits

Pushbutton switch with 1 changeover contact

Switching mode: mating
Tails suitable for center spacing 2,5 mm and 2,54 mm in acc. with DIN 40803

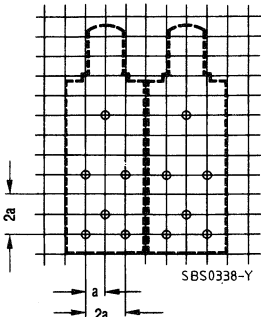


- 1) Maximum dimensions
- 2) Mounting dimension
- 3) Mounting plate
- 4) Tab bent over (if necessary connect to ground at this point)
- 5) Soft-soldered

Circuit diagram



Mounting holes (component side)



Dimension a optionally 2,5 or 2,54 mm

Contact materials
Stationary contact: nickel-plated and gold-plated
Wiping contact: nickel-plated and gold-pated

Voltage rating
Current rating
Switch capacity
Contact resistance (millivolt method); initial value
Insulation resistance; initial value
Ambient temperature range

≤ 60 Vdc/ac
≤ 0,5 Adc/ac
≤ 20 VA
≤ 50 mΩ
≥ 10⁶ MΩ
− 40 ... + 100 °C

Button color	Ordering code	PU	Price each				
			Pcs/ea	1 +	100 +	500 +	
black	C42315-A9-A1	15					

DIP-FIX Links/Switches A1347 for Printed Circuits

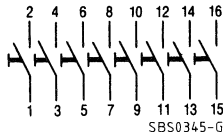
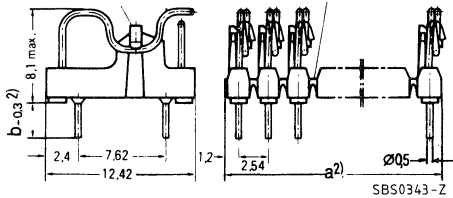
DIP-FIX links/switches; multi-section
Tails suitable for center spacing 2,54 mm in acc. with DIN 40803

DIP-FIX make contacts (8 or 24-section in-line switches)

Plastic lug for locating
the spring contact in
the OFF position

Separating points,
for individual
connection

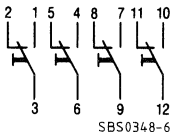
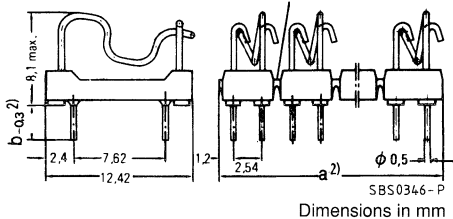
Circuit diagram and recommended
coding for the connections
(Example: 8 make contacts)



DIP-FIX changeover contacts (4 or 12-section in-line switches)

Separating points,
for individual connection

Circuit diagram and recommended
coding for the connections
(Example: 8 changeover contacts)



Contact materials
Contact surface
Surface of the tails

Voltage rating
Current rating
Switch capacity

Contact resistance (millivolt method); initial value
Insulation resistance; initial value
Dielectric
Ambient temperature range

Sn Pb } whiskerproof
Sn Pb }

10 mV ... 60 V }
≤ 0,5 A } connection
≤ 5 VA } not soldered¹⁾
≤ 100 mΩ
≥ 10⁵ MΩ
PBTP-GF
- 40 ... + 85 °C

¹⁾ Safeguarding the ON position is possible by manual soldering, if required.
²⁾ For dimensions »a« and »b« see ordering table

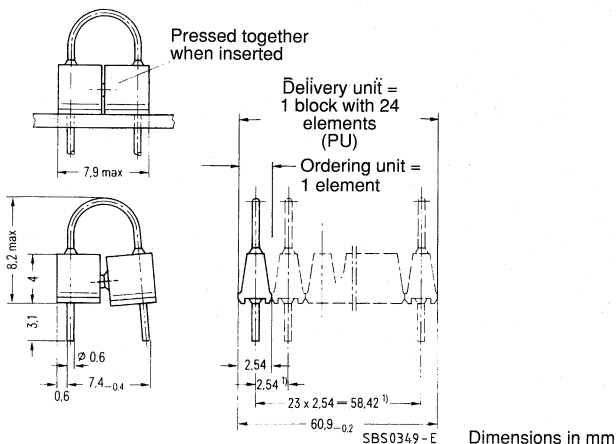
Switch	In-line switch sections	Dim. „a“	Dim. „b“	Ordering code	PU	Price each			
					Pcs/ea	1 +	50 +	100 +	500 +
Make contact	8	20,32	3,1	C42315-A1347-A108	75				
	24	60,62	3,1	C42315-A1347-A124	25				
Change- over contact	4	20,32	3,1	C42315-A1347-A204	75				
	12	60,62	3,1	C42315-A1347-A212	75				
	12	60,62	5,4	C42315-A1347-A312	25				

Other number of sections upon request.

Solder Link Block LBB 126

Solder link block LBB 126

Block of 24 snap-off solder links
Tails suitable for center spacing 2,54 × 5,08 mm



Current rating per link
at ambient temperature

+ 20 °C:
+ 70 °C:
+ 100 °C:

3 A
1,5 A
0,8 A
500 V/50 Hz
≥ 10⁴ MΩ
3 mm
1,8 mm
- 40 ... + 130 °C

Dielectric strength

Insulation resistance; initial value

Min. interlink creepage distance

Min. interlink clearance

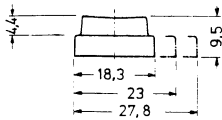
Permissible temperature range

Item	Ordering code	Packing unit	Price per element		
			1 +	100 +	500 +
Solder link	C42195-A126-A1	1 block with 24 elements			

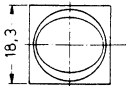
Note: Ordering code and price apply to 1 element. Available are only blocks with 24 elements each.

Keytops for STB 21 und STB 11 for Printed Circuits

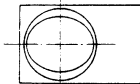
Keytops without characters



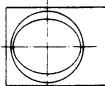
V23770-A1000-K1
Normal keytop



V23770-A3000-K1
Keytop 1 1/2,
flat RH¹⁾

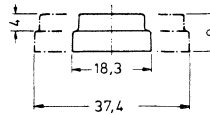


V23770-A2000-K1
Keytop 1 1/4,
flat RH¹⁾

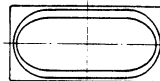


SBS0353-7

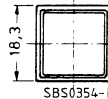
Dimensions in mm



V23770-A9100-K1
Duplex keytop,
for guide pieces see
ordering table



C26382-F302-C100
Keytop for lettering in-
sert, requires
C26382-F302-C1
Cover



¹⁾ Can also be used as keytop with flat LH

Note: Keytops with characters and other shapes of keytops are available at your nearest Siemens Office.

Item	Ordering code	PU	Min. qty.	Price each				
		Pcs/ea	Pcs	1 +	50 +	100 +	500 +	
Keytops, without characters - color light beige								
Normal	V23770-A1000-K1	20	20					
1½ keytop, flat RH	V23770-A3000-K1	20	10					
1¼ keytop, flat RH	V23770-A2000-K1	20	10					
Duplex keytop	V23770-A9100-K1	20	5					
Required guide pieces:								
1 piece per keytop	C26382-F300-C1	20	5					
2 pieces per keytop	C26382-F300-C7	40	10					
2 pieces per keytop	C26382-F300-C8	40	10					
For lettering insert	C26382-F302-C100	20	10					
Required cover (transparent)	C26382-F302-C1	20	10					
Set of keytops - color light beige, black characters								
Set	C26382-F7-B1	1						
Character set similar to DIN 2137; additional space keytop, reset keytop, keytops without characters, and suitable guide pieces								

Keylock Switches SPC 266 und SPC 758 for Printed Circuits

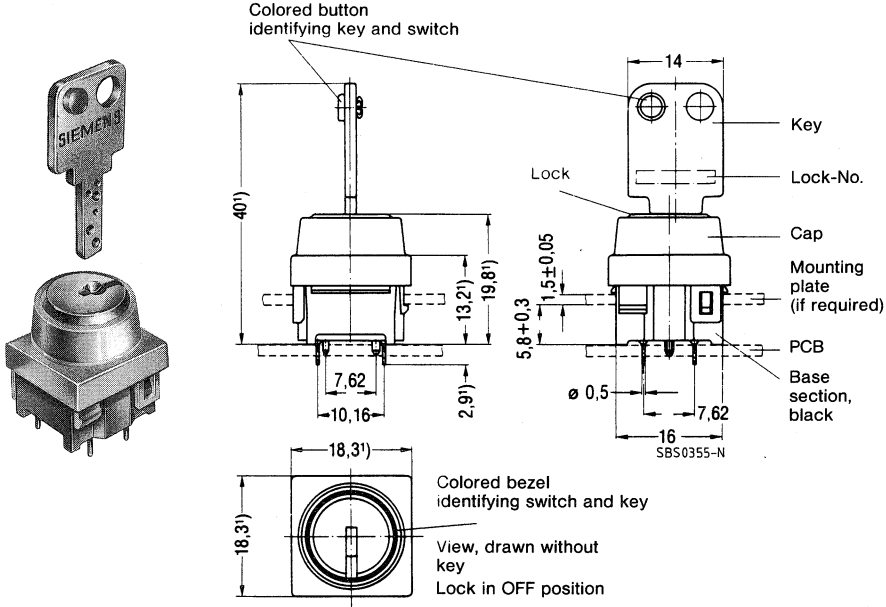
Keylock switches SPC 266 with 2 contacts

With 1 locking position

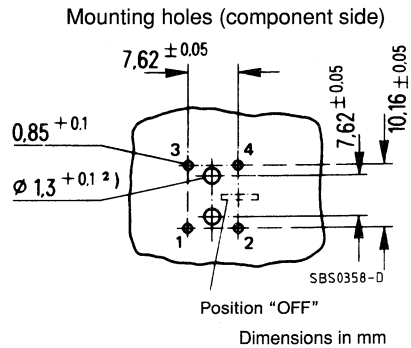
Key rotation 90°
Key removable in 2 positions
Different or identical locks

With 2 locking positions

OFF in middle position
Key rotation 2 × 90°
Key removable in 3 positions
Different or identical locks



Version	1 locking position	2 locking positions
Circuit diagram		
Contact designation	1-1	1)-(1)
Key position		
0 = OFF 1 = ON - = Key removal		



1) Maximum dimension
2) Without conducting surface

Keylock Switches SPC 266 and SPC 758 for Printed Circuits

Keylock switches SPC 758 with 1 contact

With 1 locking position

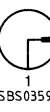
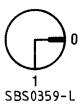
Key rotation 90°

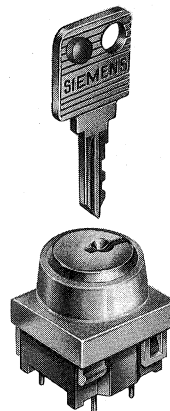
Key removable in 1 position

Different locks

Without color ring and color button

For outline drawing and
mounting holes see pre-
ceding page

Version	1 locking position
Circuit diagram	
Contact designation	
Key position	



Contact materials	- stationary contact	gold-plated
	- moving contact	gold-plated
Color	- cap	light beige
	- bezel and buttons	red (only SPC 266)

Voltage rating	≤ 48 Vdc/ac
Current rating	≤ 50 mA
Switch capacity	≤ 1 VA
Service life at 1 VA resistance value	≥ 20000 cycles
Contact resistance (millivolt method); initial value	< 60 mΩ
Insulation resistance; initial value	> 10 ⁵ MΩ
Ambient temperature range	- 25 ... + 85 °C

Version (2 keys per lock)	Ordering code	PU	Price each				
		Pcs/ea	1 +	50 +	100 +	500 +	

Keylock switches SPC 266, different locks

1 locking position	V42266-C3000-B122	5					
2 locking positions	V42266-C3000-C125	5					

Keylock switches SPC 266, identical locks

▼ 1 locking position	V42266-C4001-B122	5					
▼ 2 locking positions	V42266-C4001-C125	5					

Spare key for SPC 266, identical locks

Lock no. EB 4001	V42266-Z4001-S	1					
------------------	----------------	---	--	--	--	--	--

Keylock switch SPC 758

1 locking position	V23758-B2000-K111	5					
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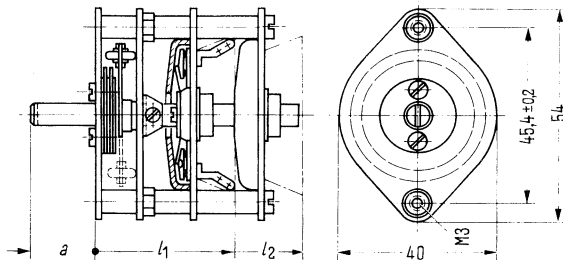
Multi-Position Rotary Switches 41 mm × 54 mm for Conventional Wiring

Multi-position rotary switches 41 mm × 54 mm (small rotary switches)

In accordance with DIN 41631 and IEC 132-5

26-position indexing mechanism, switching mode: mating

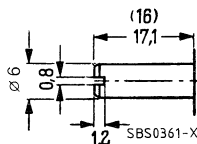
Single-pole (number of poles per deck)



Installation length (max. dimension) l_1 (1 deck) = 33,3 mm,
 l_2 (2 decks) = 48,9 mm

Shaft end
Dimension a

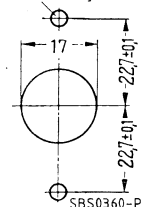
() Min. dimension



Dimensions in mm

Mounting holes

3.6 dia countersink
for M3 where
necessary



Materials

Decks made of phenolic paper, silver-plated contacts

Voltage rating (at resistive load)

≤ 250 V

Current rating

≤ 3 A

Switch capacity

≤ 60 W

Contact resistance (millivolt method); initial value

≤ 5 mΩ

Insulation resistance; initial value

≥ 10⁴ MΩ

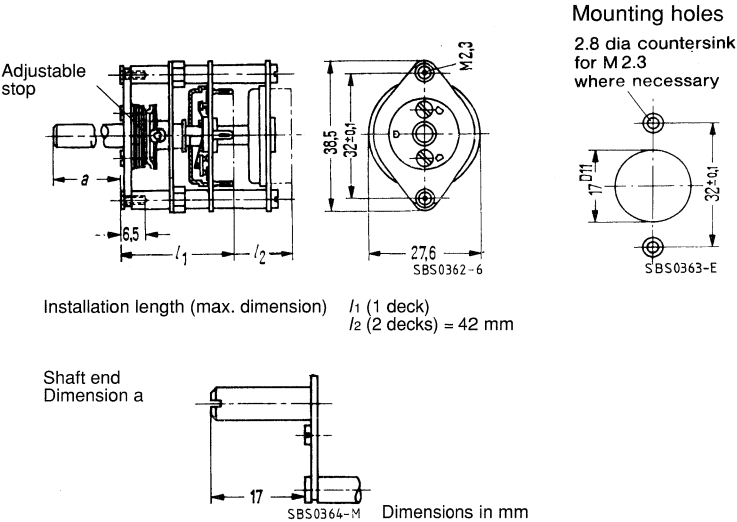
Ambient temperature range

– 25 ... + 70 °C

Decks	Usable positions	Ordering code	PU	Price each				
			Pcs/ea	1 +	50 +	100 +	500 +	
1	25	C40315-M161-A226	1					
2	25	C40315-M161-A227	1					

Multi-Position Rotary Switch 28 mm × 39 mm for Conventional Wiring

Multi-position rotary switch 28 mm × 39 mm (control switch)
 In accordance with DIN 41632
 12-position indexing mechanism, switching mode: mating
 Single-pole (number of poles per deck)



Materials
 Deck made of phenolic paper, silver-plated contacts

Voltage rating (at resistive load)	≤ 250 V
Current rating	≤ 3 A
Switch capacity	≤ 60 W
Contact resistance (millivolt method); initial value	≤ 5 mΩ
Insulation resistance; initial value	≥ 10 ⁴ MΩ
Ambient temperature range	- 25 ... + 70 °C

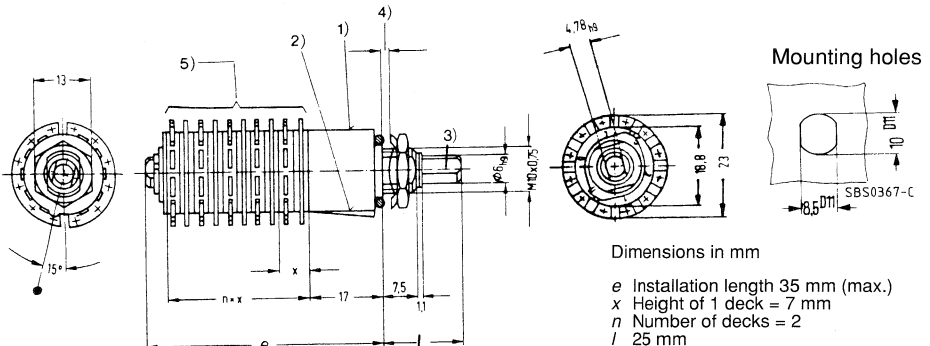
Decks	Usable positions	Ordering code	PU	Price each				
				Pcs/ea	1 +	50 +	100 +	500 +
2	12	C40315-M301-A2	1					

616

Multi-Position Rotary Switch Ø 23 mm for Conventional Wiring

Multi-position rotary switch Ø 23 mm

12-position indexing mechanism, switching mode: mating
Single-pole (number of poles per deck)



Switch with > 2 decks shown,
up to 6 decks available

Dimensions in mm

e Installation length 35 mm (max.)

x Height of 1 deck = 7 mm

n Number of decks = 2

l 25 mm

1) Indexing

2) Marking of switch position and
soldering lug no. 1

3) Shaft end (continuous)

4) Mounting plate 0,8 to 3,5 mm thick

5) Decks

Contact materials

Stationary contacts: nickel-plated and gold-plated

Moving contacts: nickel-plated and gold plated

Voltage rating

≤ 100 Vdc/ac

Current rating

$\leq 0,5$ Adc/ac

Switch capacity

≤ 10 VA

Contact resistance (millivolt methsod); initial value

≤ 30 m Ω

Insulation resistance; initial value

$\geq 10^5$ M Ω

Ambient temperature range

$-55 \dots +85^\circ\text{C}$

Decks	Usable positions	Ordering code	PU	Price each				
				Pcs/ea	1 +	50 +	100 +	500 +
2	12	V42265-A142-B121	1					

Rotary-Switch Kits for Conventional Wiring

Kit containing

multi-position rotary switches $\varnothing$ 17 mm
 Possible variations: 1 to 4 poles
 1 to 5 decks
 (for characteristics see page 616)



Contents:
 12-position indexing mechanism
 (12 switching positions),
 mating mode, length of shaft 17 mm
 5 decks
 6 rotors
 Accessories
 Assembly instruction

multi-position rotary switches $\varnothing$ 23 mm
 Possible variations: 1 to 6 poles
 1 to 6 decks
 (for characteristics see page 617)



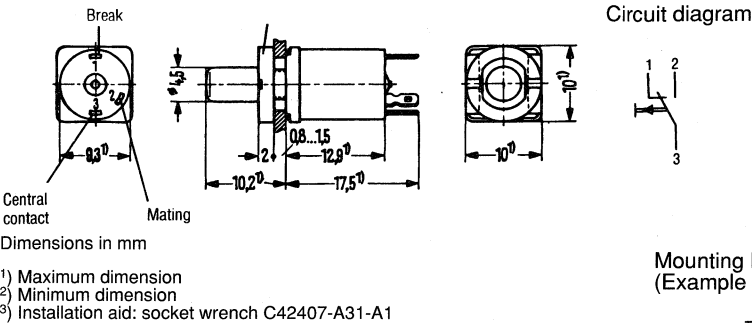
Contents:
 12-position indexing mechanism
 (12 switching positions),
 mating mode, length of shaft 17 mm
 6 decks
 8 rotors
 Accessories
 Assembly instruction

These kits are intended to enable the user to assemble a switch by himself, e.g. for laboratory applications.

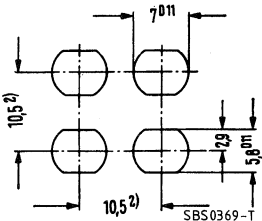
Item	Ordering code	PU	Price each				
		Pcs/ea	1 +				
Kit with 17-mm switches	V42265-P40-A1	1					
Kit with 23-mm switches	V42265-E40-A1	1					

Pushbutton Switches A11 for Conventional Wiring

Pushbutton switches with 1 changeover contact
Switching mode: mating or break



Mounting holes
(Example for 4 switches)



Contact materials
Stationary contact: nickel-plated and gold-plated
Wiping contact: nickel-plated and gold-plated

Voltage rating
Current rating
Switch capacity

$\leq 60 \text{ Vdc/ac}$
 $\leq 0,5 \text{ Adc/ac}$
 $\leq 20 \text{ VA}$

Contact resistance (millivolt method); initial value
Insulation resistance; initial value
Ambient temperature range

$\leq 50 \text{ m}\Omega$
 $\geq 10^6 \text{ M}\Omega$
 $-40 \dots +100^\circ\text{C}$

Button color	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
Mating mode							
black	C42315-A11-A2	20					
white	C42315-A11-A3	20					
red	C42315-A11-A4	20					
Break mode							
black	C42315-A11-A8	20					
white	C42315-A11-A9	20					
red	C42315-A11-A10	20					

Mounting Fixtures, Sockets and Securing Fixtures

Contents	Page
Mounting fixtures for transistors and diodes	622
Mounting fixtures for resistors and capacitors	623
Mounting fixture for light emitting diodes	624
Signal lamp sockets	
for lamps with push-in socket	625
for lamps with bayonet socket	626
for double-ended tubular lamps	626
Push-in socket and securing fixture for crystal oscillators	627

Note: In this chapter packing units (PU) are quoted in addition to the relevant ordering codes. Ordering the quantities specified as packing units has the following advantages:

- You receive original packings from the manufacturing plant.
- All products contained in a packing unit stem from one production lot.
- Mistakes or damage which may arise from transferring the products from original packing to delivery packing are excluded.

For these reasons we recommend to order the minimum quantity of one packing unit.

The contact surfaces of some products are plated with noble metals. A surcharge, depending on the noble metal quotation of the day, may therefore be added to the stated prices.

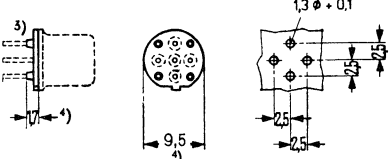
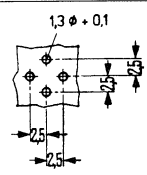
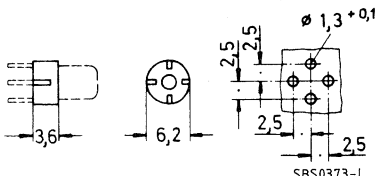
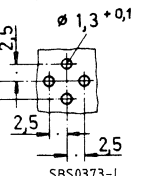
Further technical literature

Data Book "Plug Connectors", A23999-A310-A971-★-7604

Mounting Fixtures for Transistors and Diodes

For printed circuits

For vertical arrangement

Dimensions in mm	Mounting holes (component side)	Suitable for diodes and transistors	with max. $\varnothing$ in mm
		TO-5 housing 5 ... DIN 41873	9,4
		TO-18 housing 18 ... DIN 41876	5,8

For center spacing 2,5 mm,
also suitable for 2,54 mm

³⁾ Mounting pad for double-faced and/or through-plated PC boards.

⁴⁾ Maximum dimensions

Mounting fixture	Ordering code	PU	Price each
		Pcs/ea	1 + 100 + 500 +

For transistors and diodes

for TO-5 housing	C42121-A11-C6	100					
for TO-18 housing	C42121-A11-C10	100					

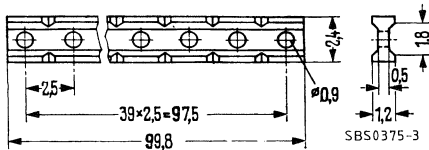
Dimensions in mm

Mounting Fixtures for Resistors and Capacitors

For printed circuits

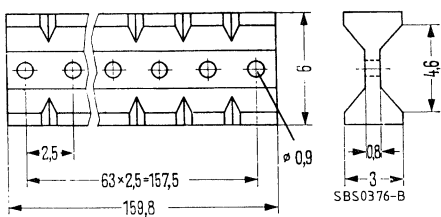
For horizontal arrangement

for small-sized components



Dimensions in mm

for medium-sized components

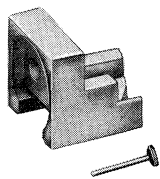


The mounting fixtures can be divided into lengths to match the components.

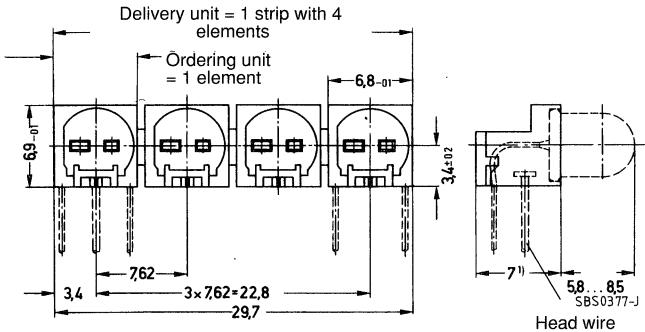
Mounting fixture	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
For resistors and capacitors							
of small size	C42121-A40-C14	1000					
of medium size	C42121-A40-C15	1000					

Mounting Fixture for Light Emitting Diodes

For printed circuits

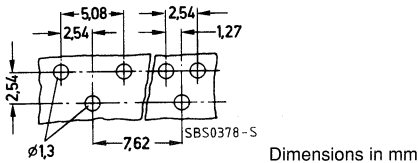


The illustration is approx. twice the original size



Mounting holes (component side)
Pin spacing optionally 5,08 or 2,54 mm

1) Maximum dimensions



Center spacing 2,54 mm or 1,27 mm,
also suitable for 2,5 mm or 1,25 mm

Version: 4-fold unit from which the individual mounting fixtures can be broken off.
Suitable for LEDs with an external diameter of 4,3 to 5,1 mm.
For horizontal arrangement of the LED.

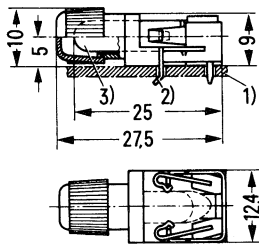
Item	Ordering code	Packing unit	Price per element		
			1 +	100 +	500 +
Mounting fixture	C42121-A93-A1	100 strips with 4 elements each			

Note: Ordering code and price apply to 1 element. Available are only strips with 4 elements.

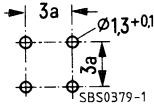
Signal Lamp Sockets

For printed circuits

For horizontal mounting



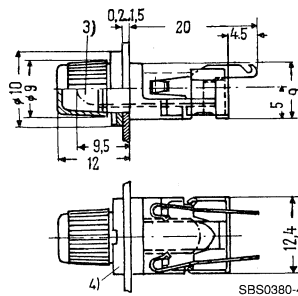
Mounting holes
(component side)



Center spacing $a = 2,5\text{ mm}$,
also suitable for 2,54 mm

For conventional wiring

(Front panel installation)



Mounting holes $\varnothing 8\text{ mm}$

Note: Sockets (without signal lamps)
suitable for lamps 12 to 60 V with
push-in socket T5,5k

- 1) PC board
- 2) Tab bent over and
flow-soldered
- 3) Signal lamp
- 4) Permissible tightening
torque $\leq 63\text{ Ncm}$

Dimensions in mm

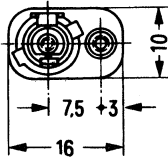
Version/Mounting	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
Signal lamp sockets (without lens cap)							
for printed circuits	C42230-A5-A7	15					
for conventional wiring	C42230-A5-A17	15					
Lens caps							
Color white	C42230-A5-C14	15					
Color red	C42230-A5-C16	15					

Signal Lamp Sockets

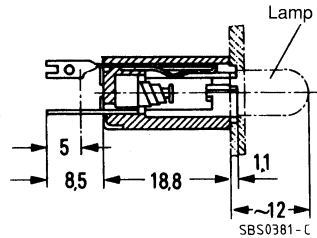
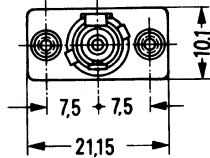
For conventional wiring

With fixing flange (flange with holes or pressed-in nuts M2,5)

Secured on one side

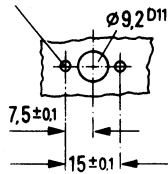


Secured on both sides



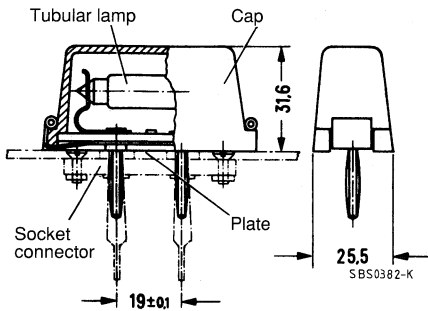
Note: Socket (without signal lamp) suitable for lamps 6 to 80 V with bayonet socket; lamp base in acc. with BA 7s DIN 49 710

Ø 2,8 or Af 2,5 DIN 75



Mounting holes 1 or 2 holes with Ø 2,8 required, depending on version

Plug-on, with white lens cap



Note: Socket (without lamp, socket connector and plate) for tubular incandescent and neon lamps 6 to 60 V with lamp socket S 8 (DIN 49 705)

Dimensions in mm

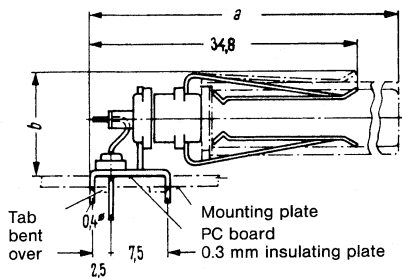
Signal lamp socket	Ordering code	PU	Price each				
		Pcs/ea	1 +	100 +	500 +		
For conventional wiring							
Flange secured on one side, with hole	C42230-A3-A4	15					
Flange secured on both sides, with holes	C42230-A3-A3	15					
Flange secured on both sides, nuts M2,5	C42230-A3-A5	15					
Plug-on							
with white lens cap	C42230-A6-A1	10					

Socket and Securing Fixture for Crystal Oscillators

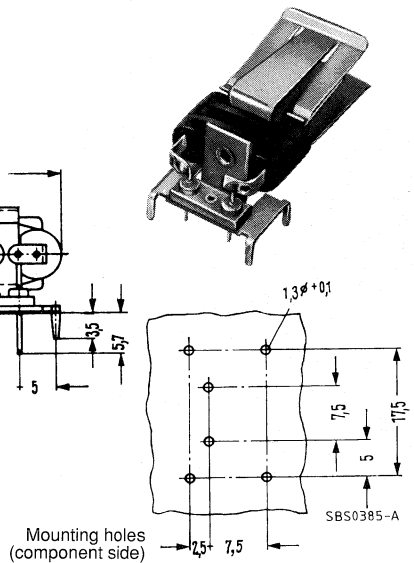
Push-in socket for crystal oscillators Q06 to Q09, Q36 to Q39 and Q46

With grounding and retaining spring,
silver-plated contact springs

For printed circuits

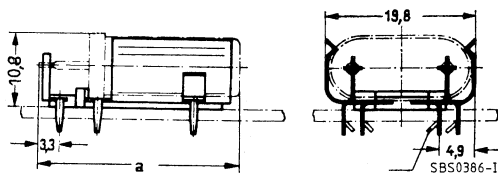


Dimensions a and b depend
on crystal oscillator used



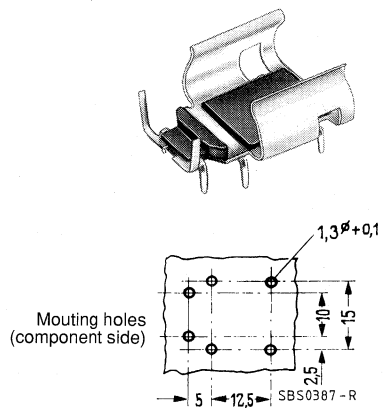
Securing fixture for crystal oscillators Q01, Q02, Q03, Q21, Q22, Q23 and Q49

For printed circuits



Dimension a depends on
crystal oscillator used

Bend tabs 60° to 90°
and flow solder



Dimensions in mm

Item	Ordering code	PU	Price each			
			Pcs/ea	1 +	100 +	500 +
Push-in socket	C42334-A37-A6	10				
Securing fixture	C42121-A25-A3	15				

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The chip versions available from our SCS warehouses come in the following packing units¹⁾:

Type	Size	Tape packaging in accordance with IEC 286-3 Pieces per reel				Bulk Pieces
		180-mm reel	Tape	330-mm reel	Tape	
		8 mm	12 mm	12 mm	16 mm	

NTC chip thermistors

C 620	0805	4000				500
C 621	1206	4000				500

PTC chip thermistors

A 1701	0805	4000				5000
A 1707	1210	2000				3000
A 1708	1812	1000				2000
A 1709	2220	1000				1000
P 1101	3225	—				500
P 1115	3225	—				500
P 1135	3225	—				500
P 1201	3225	—				500
P 1215	3225	—				500
P 1235	3225	—				500
P 1301	4032	—				500
P 1315	4032	—				500
P 1335	4032	—				500

Metal oxide chip varistors

CN 1210 M4	1210	4000	—		—	
CN 1210 M4, L8	1210	3000	—		—	
CN 2220	2220	—	1500		—	
CU 3225	3225	—	—		1000	
CU 4032	4032	—	—		1000	

Thick-film chip resistors

B54102	0805	5000				500
B54103	1206	5000				500

Tantalum electrolytic chip capacitors

B45196	A	2000	—			
B45196	B	2000	—			
B45196	C	—	750			
B45196	D	—	750			

HF chokes

SIMID 01	1210	2500		—		
SIMID 02	1210	2000		—		
SIMID 03	1812	—		2500		
SIMID 04	1008	2000		—		

Note

¹⁾ With quantities of tape-packaged types < 1 PU (packing unit), the tapes do not include a tape feed strip. If automatic processing is intended, this tape feed (approx. 20 cm) must be additionally ordered. The order has to contain the note: "Tape in one piece, no partial deliveries."

As orders for tape-packaged types may also comprise quantities of less than one complete packing unit, you are asked to understand that we cannot accept the return of units which have been cut off the tape.

		Tape packaging in accordance with IEC 286-3 Pieces per reel		Bulk Pieces
		180-mm reel	330-mm reel	

Multilayer ceramic chip capacitors

Size	C _R	Ceramic material						
		C0G	X7R	Z5U	C0G	X7R	Z5U	
0805	≤ 390 pF	4000	—	—	16000	—	—	
	> 390 pF	3000	—	—	12000	—	—	
	≤ 22 nF	—	4000	4000	—	16000	16000	
	> 22 nF	—	3000	4000	—	12000	16000	
1206	≤ 1,0 nF	4000	—	—	16000	—	—	
	> 1,0 nF	3000	—	—	12000	—	—	
	≤ 56 nF	—	4000	4000	—	16000	16000	
	> 56 nF	—	3000	4000	—	12000	16000	
1210	≤ 2,2 nF	4000	—	—	16000	—	—	
	2,7 nF	3000	—	—	12000	—	—	
	3,3 nF	3000	—	—	12000	—	—	
	3,9 nF	2000	—	—	8000	—	—	
	4,7 nF	2000	—	—	8000	—	—	
	≤ 82 nF	—	4000	—	—	16000	—	
	> 82 nF	—	3000	4000	—	12000	16000	
1812			1500	1500				
2220			1500	1500				

Type	Polystyrene tray Pieces per tray	Stick/Bar magazine Pieces per magazine	Bulk Pieces
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Ferrites

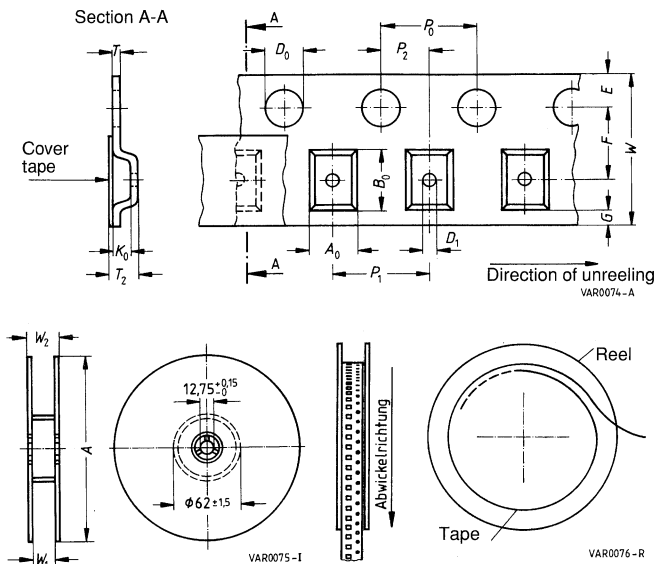
Coil formers	RM 5	—	500
Clamps	RM 5	—	1000
Coil formers	RM 6	—	500
Clamps	RM 6	—	1000
Connect. board	P 4,6 × 4,1	—	500
Pot cores	P 9 × 5	500	—
Coil formers	P 9 × 5	—	500
Coil formers	EP 7	—	1000
Coil formers	EP 13	—	500
Coil formers	E 6,3	—	1000
Cover cap	E 6,3	—	1000
Coil formers	E 8,8	—	1000
Coil formers	E 13/4	—	500

Miniature relays

P 1		40	
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Dual-in-line switches

A 3000		see page 601	
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Dimensions	Size											
mm	0805	1008	1206	1210	1812	2220	3225	4032	A ¹⁾	B ¹⁾	C ¹⁾	D ¹⁾
A ₀	The rated dimensions of the component compartment have been derived from the relevant component specification and are chosen such that the components cannot change their orientation within the tape.								1,9	3,3	3,7	4,7
B ₀									3,5	3,8	6,4	7,7
K ₀									1,5	2,1	2,9	3,2
T ₂									1,9	2,3	3,2	3,5
D ₀	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
D ₁	1	1	1	1	1,5	1,5	1,5	1,5	—	—	—	—
P ₀	4	4	4	4	4	4	4	4	4	4	4	4
P ₂	2	2	2	2	2	2	2	2	2	2	2	2
P ₁	4	4	4	4	8	8	12	12	4	8	8	8
W	8	8	8	8	12	12	16	16	8	12	12	12
E	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75
F	3,5	3,5	3,5	3,5	5,5	5,5	7,5	7,5	3,5	5,5	5,5	5,5
A	180	180	180	180	180	180	—	—	180	180	180	180
	330	—	330	330	—	—	330	330	—	—	—	—
W ₁	8,4	8,4	8,4	8,4	12,4	12,4	—	—	10	14	14	14
	8,4	—	8,4	8,4	—	—	16,4	16,4	—	—	—	—
W ₂	14,4	14,4	14,4	14,4	18,4	18,4	—	—	15,5	20,5	20,5	20,5
	14,4	—	14,4	14,4	—	—	22,4	22,4	—	—	—	—

¹⁾ Sizes for tantalum electrolytic chip capacitors

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