



PZUxBL-Q series

Single Zener diodes in a SOD882 package

Rev. 1 — 3 September 2025

Product data sheet

1. General description

General-purpose Zener diodes in a SOD882 leadless ultra small Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Non-repetitive peak reverse power dissipation: $P_{ZSM} \leq 40$ W
- Total power dissipation: $P_{tot} \leq 250$ mW
- Tolerance series: B: approximately ± 5 %; B2: approximately ± 2 %
- Wide working voltage range: nominal 2.4 V to 36 V (E24 range)
- Low reverse current I_R range
- Small plastic package suitable for surface-mounted design
- PZU5.1BL-Q - 10B2L-Q: Very low dynamic impedances at low currents, very low leakage current, hard breakdown knee
- PZU11B2L-Q - 36BL-Q: Intentional minor rise of leakage current for optimized fast switching and noise reduction [Ref. [AN90031](#)]
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- General regulation functions

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	forward voltage	$I_F = 100$ mA [1]	-	-	1.1	V
P_{ZSM}	non-repetitive peak reverse power dissipation	[2]	-	-	40	W
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[3]	-	250	mW
			[4]	-	500	mW

[1] Pulse test: $t_p \leq 300$ μ s; $\delta \leq 0.02$


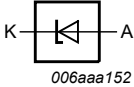
[2] $t_p = 100$ μ s; square wave; $T_j = 25$ °C prior to surge

[3] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

[4] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1cm².

5. Pinning information

Table 2. Pinning

Pin	Description		Simplified outline	Symbol
1	cathode	[1]	 Transparent top view	
2	anode			

[1] The marking bar indicates the cathode

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PZU2.4BL-Q to PZU36BL-Q [1]	DFN1006-2	leadless ultra small plastic package; 2 terminals	SOD882
PZU2.7B2L-Q to PZU24B2L-Q [2]			

[1] The series consists of 29 types with nominal working voltages from 2.4 V to 36 V.

[2] The series consists of 25 types with nominal working voltages from 2.7 V to 24 V.

7. Marking

Table 4. Marking codes

Type number	Marking code	Type number	Marking code
PZU2.4BL-Q	H2	PZU2.7B2L-Q	HZ
PZU2.7BL-Q	H3	PZU3.0B2L-Q	K1
PZU3.0BL-Q	H4	PZU3.3B2L-Q	K2
PZU3.3BL-Q	H5	PZU3.6B2L-Q	K3
PZU3.6BL-Q	H6	PZU3.9B2L-Q	K4
PZU3.9BL-Q	H7	PZU4.3B2L-Q	K5
PZU4.3BL-Q	H8	PZU4.7B2L-Q	K6
PZU4.7BL-Q	H9	PZU5.1B2L-Q	K7
PZU5.1BL-Q	HA	PZU5.6B2L-Q	K8
PZU5.6BL-Q	HB	PZU6.2B2L-Q	H1
PZU6.2BL-Q	HC	PZU6.8B2L-Q	K9
PZU6.8BL-Q	HD	PZU7.5B2L-Q	KA
PZU7.5BL-Q	HE	PZU8.2B2L-Q	KB
PZU8.2BL-Q	HF	PZU9.1B2L-Q	KC
PZU9.1BL-Q	HG	PZU10B2L-Q	KD
PZU10BL-Q	HH	PZU11B2L-Q	KE
PZU11BL-Q	HK	PZU12B2L-Q	KF
PZU12BL-Q	HL	PZU13B2L-Q	KG
PZU13BL-Q	HM	PZU14B2L-Q	KH
PZU15BL-Q	HN	PZU15B2L-Q	KK
PZU16BL-Q	HP	PZU16B2L-Q	KL
PZU18BL-Q	HR	PZU18B2L-Q	KM
PZU20BL-Q	HS	PZU20B2L-Q	KN
PZU22BL-Q	HT	PZU22B2L-Q	KP
PZU24BL-Q	HU	PZU24B2L-Q	KR
PZU27BL-Q	HV	-	-
PZU30BL-Q	HW	-	-
PZU33BL-Q	HX	-	-
PZU36BL-Q	HY	-	-

8. Limiting values

Table 5. Limiting values
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
I _F	forward current		-	200	mA
I _{ZSM}	non-repetitive peak reverse current		[1] -	see: Table 8	
P _{ZSM}	non-repetitive peak reverse power dissipation		[1] -	40	W
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[2] -	250	mW
			[3] -	500	mW
T _j	junction temperature		-	150	°C
T _{amb}	ambient temperature		-55	+150	°C
T _{stg}	storage temperature		-65	+150	°C

[1] t_p = 100 μs; square wave; T_j = 25 °C prior to surge
[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
[3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1cm².

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1] -	-	500	K/W
			[2] -	-	250	K/W
R _{th(j-sp)}	thermal resistance from junction to solder point		[3] -	-	55	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1cm².
[3] Soldering point of cathode tab.

10. Characteristics

Table 7. Characteristics
T_j = 25 °C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _F	forward voltage	I _F = 10 mA	[1] -	-	0.9	V
		I _F = 100 mA	[1] -	-	1.1	V

[1] Pulse test: t_p ≤ 300 μs; δ ≤ 0.02

Table 8. Characteristics per type; PZU2.4BL-Q to PZU36BL-Q

T_j = 25 °C unless otherwise specified

PZU xBL-Q	Sel	Working voltage V _Z (V);		Maximum differential resistance r _{dif} (Ω)		Reverse current I _R (μA)		Temperature coefficient S _Z (mV/K);	Diode capacitance C _d (pF) ; V _R = 0 V	Non-repetitive peak reverse current I _{ZSM} (A) t _p = 100 μs; square wave; T _j = 25 °C ; prior to surge
		I _Z = 5 mA		I _Z = 0.5 mA	I _Z = 5 mA			I _Z = 5 mA	f = 1 MHz;	t _p = 100 μs; square wave; T _j = 25 °C ; prior to surge
		Min	Max	Max	Max	Max	V _R (V)	Typ	Max	Max
2.4	B	2.3	2.6	1000	100	50	1	-1.6	450	8
2.7	B	2.5	2.9	1000	100	20	1	-2.0	440	8
	B2	2.65	2.9							
3.0	B	2.80	3.20	1000	95	10	1	-2.1	425	8
	B2	2.95	3.20							
3.3	B	3.10	3.50	1000	95	5	1	-2.4	410	8
	B2	3.25	3.50							
3.6	B	3.40	3.80	1000	90	5	1	-2.4	390	8
	B2	3.55	3.80							
3.9	B	3.70	4.10	1000	90	3	1	-2.5	370	8
	B2	3.87	4.10							
4.3	B	4.01	4.48	1000	90	3	1	-2.5	350	8
	B2	4.15	4.34							
4.7	B	4.42	4.90	800	80	2	1	-1.4	325	8
	B2	4.55	4.75							
5.1	B	4.84	5.37	250	60	2	1.5	0.3	300	5.5
	B2	4.98	5.20							
5.6	B	5.31	5.92	100	40	1	2.5	1.9	275	5.5
	B2	5.49	5.73							
6.2	B	5.86	6.53	80	30	0.5	3	2.7	250	5.5
	B2	6.06	6.33							
6.8	B	6.47	7.14	60	20	0.5	3.5	3.4	215	5.5
	B2	6.65	6.93							
7.5	B	7.06	7.84	60	10	0.5	4	4.0	170	3.5
	B2	7.28	7.60							
8.2	B	7.76	8.64	60	10	0.5	5	4.6	150	3.5
	B2	8.02	8.36							
9.1	B	8.56	9.55	60	10	0.5	6	5.5	120	3.5
	B2	8.85	9.23							
10	B	9.45	10.55	60	10	0.1	7	6.4	110	3.5
	B2	9.77	10.21							
11	B	10.44	11.56	60	10	0.1	8	7.4	108	3
	B2	10.76	11.22							
12	B	11.42	12.60	80	10	0.1	9	8.4	105	3
	B2	11.74	12.24							

PZU xBL-Q	Sel	Working voltage V _Z (V);		Maximum differential resistance r _{dif} (Ω)		Reverse current I _R (μA)		Temperature coefficient S _Z (mV/K);	Diode capacitance C _d (pF) ; V _R = 0 V	Non-repetitive peak reverse current I _{ZSM} (A) t _p = 100 μs; square wave; T _j = 25 °C ; prior to surge
		I _Z = 5 mA		I _Z = 0.5 mA	I _Z = 5 mA			I _Z = 5 mA	f = 1 MHz;	
		Min	Max	Max	Max	Max	V _R (V)	Typ	Max	
13	B	12.47	13.96	80	10	0.1	10	9.4	103	2.5
	B2	12.91	13.49							
14	B2	13.70	14.30	80	10	0.1	11	10.4	101	2
15	B	13.84	15.52	80	15	0.05	11	11.4	99	2
	B2	14.34	14.98							
16	B	15.37	17.09	80	20	0.05	12	12.4	97	1.5
	B2	15.85	16.51							
18	B	16.94	19.03	80	20	0.05	13	14.4	93	1.5
	B2	17.56	18.35							
20	B	18.86	21.08	100	20	0.05	15	16.4	88	1.5
	B2	19.52	20.39							
22	B	20.88	23.17	100	25	0.05	17	18.4	84	1.3
	B2	21.54	22.47							
24	B	22.93	25.57	120	30	0.05	19	20.4	80	1.3
	B2	23.72	24.78							
27	B	25.1	28.9	150	40	0.05	21	23.4	73	1
30	B	28	32	200	40	0.05	23	26.6	66	1
33	B	31	35	250	40	0.05	25	29.7	60	0.9
36	B	34	38	300	60	0.05	27	33.0	59	0.8

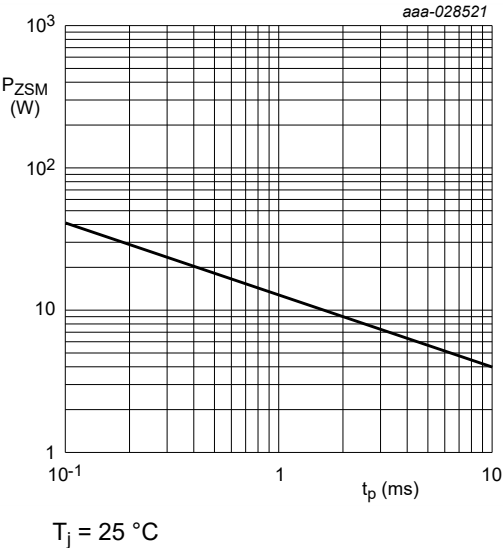


Fig. 1. Non-repetitive peak reverse power dissipation as a function of pulse duration; maximum values

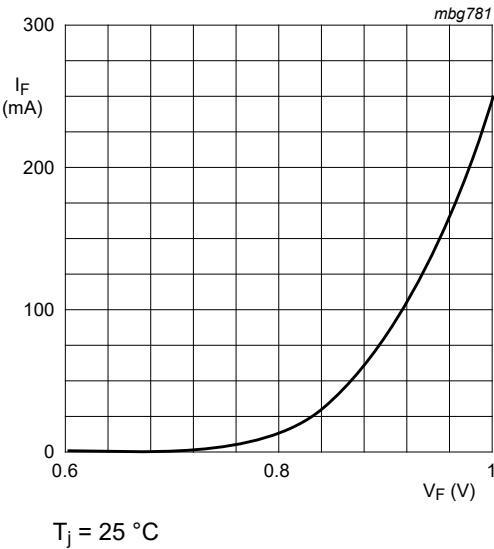
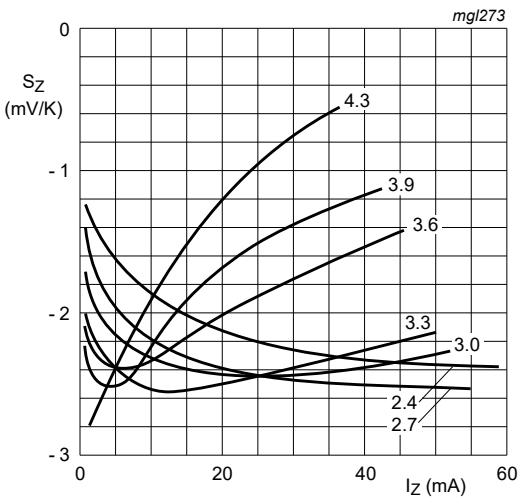
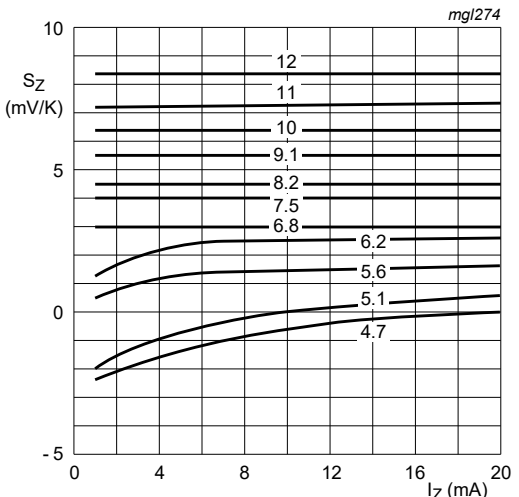


Fig. 2. Forward current as a function of forward voltage; typical values



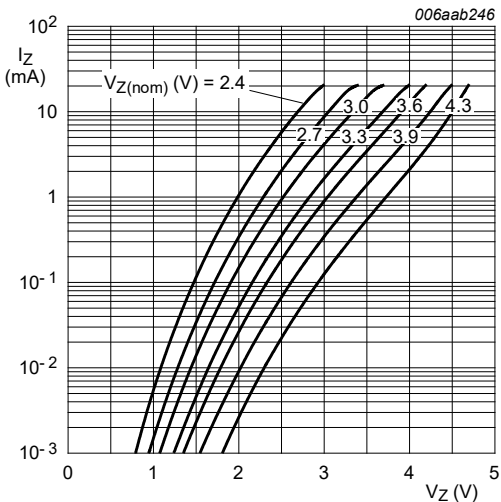
PZU2.4BL-Q to PZU4.3B2L-Q
 $T_j = 25\text{ }^{\circ}\text{C}$ to $150\text{ }^{\circ}\text{C}$

Fig. 3. Temperature coefficient as a function of working current; typical values



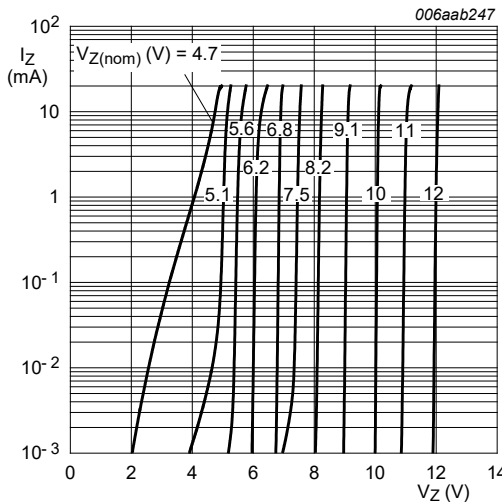
PZU4.7BL-Q to PZU12B2L-Q
 $T_j = 25\text{ }^{\circ}\text{C}$ to $150\text{ }^{\circ}\text{C}$

Fig. 4. Temperature coefficient as a function of working current; typical values



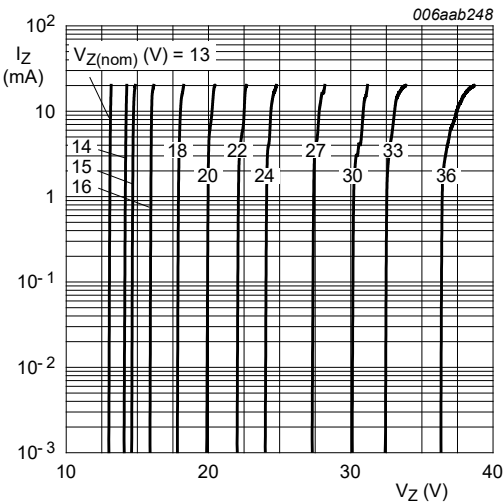
PZU2.4BL-Q to PZU4.3B2L-Q
 $T_j = 25\text{ }^{\circ}\text{C}$

Fig. 5. Working current as a function of working voltage; typical values



PZU4.7BL-Q to PZU12B2L-Q
 $T_j = 25\text{ }^{\circ}\text{C}$

Fig. 6. Working current as a function of working voltage; typical values



PZU13BL-Q to PZU36BL-Q
 $T_j = 25\text{ }^{\circ}\text{C}$

Fig. 7. Working current as a function of working voltage; typical values

11. Test information

Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard *Q101 - Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline

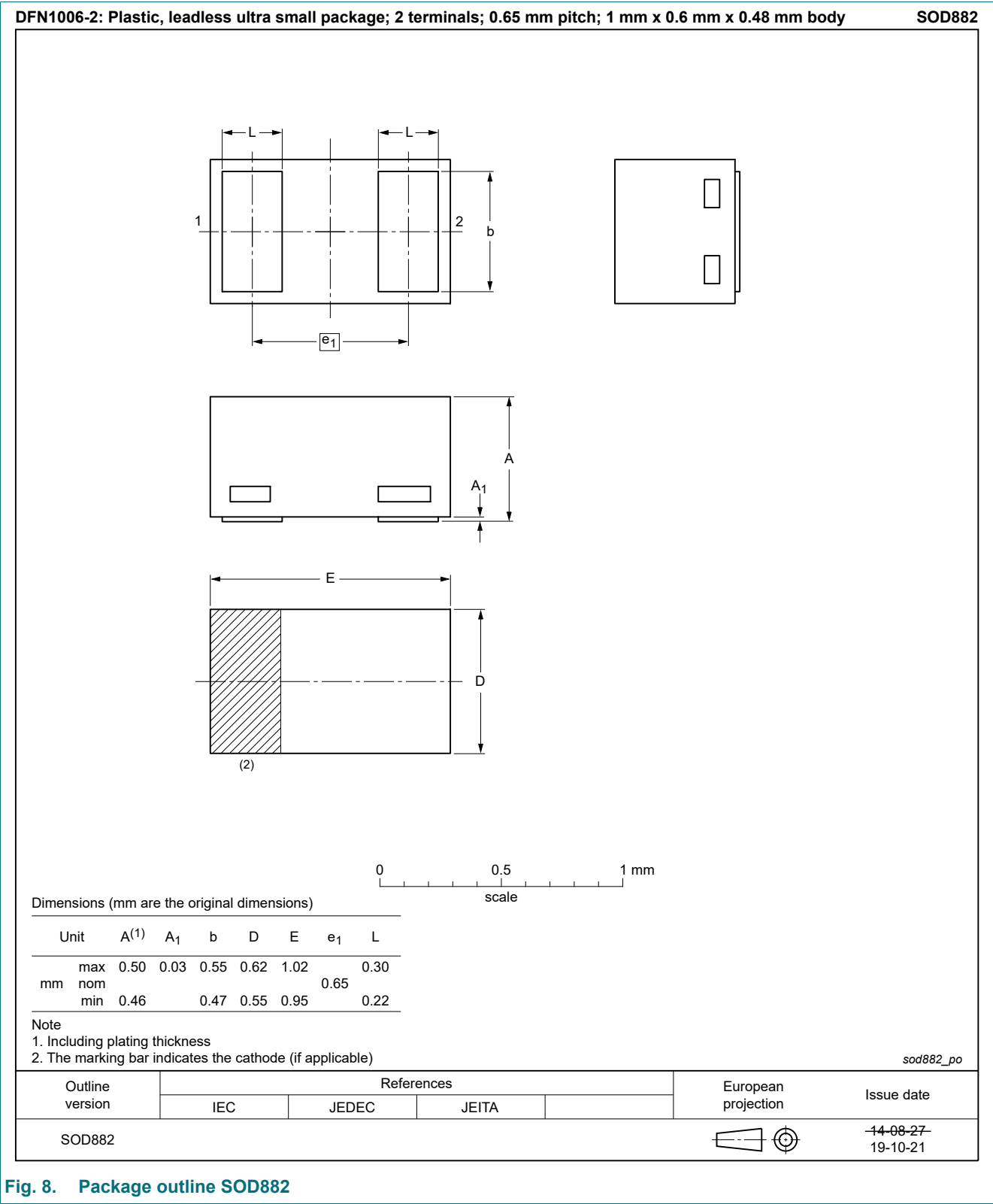
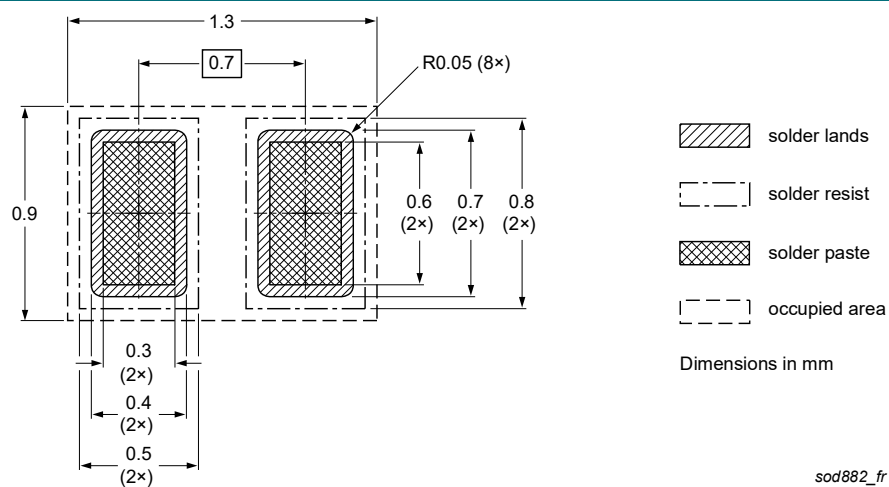


Fig. 8. Package outline SOD882

13. Soldering



Reflow soldering is the only recommended soldering method.

Fig. 9. Reflow soldering footprint for SOD882

14. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
PZUXBL-Q_SER v. 1	20250903	Product data sheet	-	-

15. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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Contents

1. General description..... 1

2. Features and benefits..... 1

3. Applications..... 1

4. Quick reference data..... 1

5. Pinning information.....2

6. Ordering information.....2

7. Marking..... 3

8. Limiting values..... 4

9. Thermal characteristics..... 4

10. Characteristics..... 4

11. Test information..... 8

12. Package outline..... 9

13. Soldering..... 10

14. Revision history..... 11

15. Legal information..... 12

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