

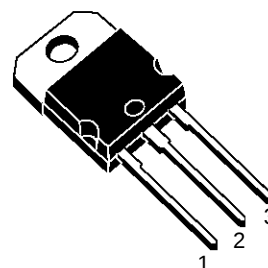
HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPES

- HIGH CURRENT CAPABILITY
- VERY LOW SATURATION VOLTAGE AT $I_C = 20A$
- FAST TURN-ON AND TURN-OFF

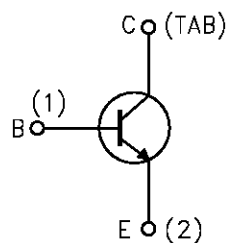
APPLICATIONS

- HIGH FREQUENCY AND EFFICIENCY CONVERTERS
- SWITCHING REGULATORS
- MOTOR CONTROLS



TO-218

INTERNAL SCHEMATIC DIAGRAM



SC08820

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUW48	BUW49	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	120	160	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	80	V
V_{BE0}	Emitter-Base Voltage ($I_C = 0$)	7	7	V
I_C	Collector Current	30	30	A
I_{CM}	Collector Peak Current ($t_p = <10ms$)	45	40	A
I_B	Base Current	8	6	A
I_{BM}	Base Peak Current ($t_p = <10ms$)	12	10	A
P_{tot}	Total Power Dissipation at $T_{case} < 25\ ^\circ C$	150		W
T_{stg}	Storage Temperature	-65 to 175		$^\circ C$
T_j	Max. Operating Junction Temperature	175		$^\circ C$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1	°C/W
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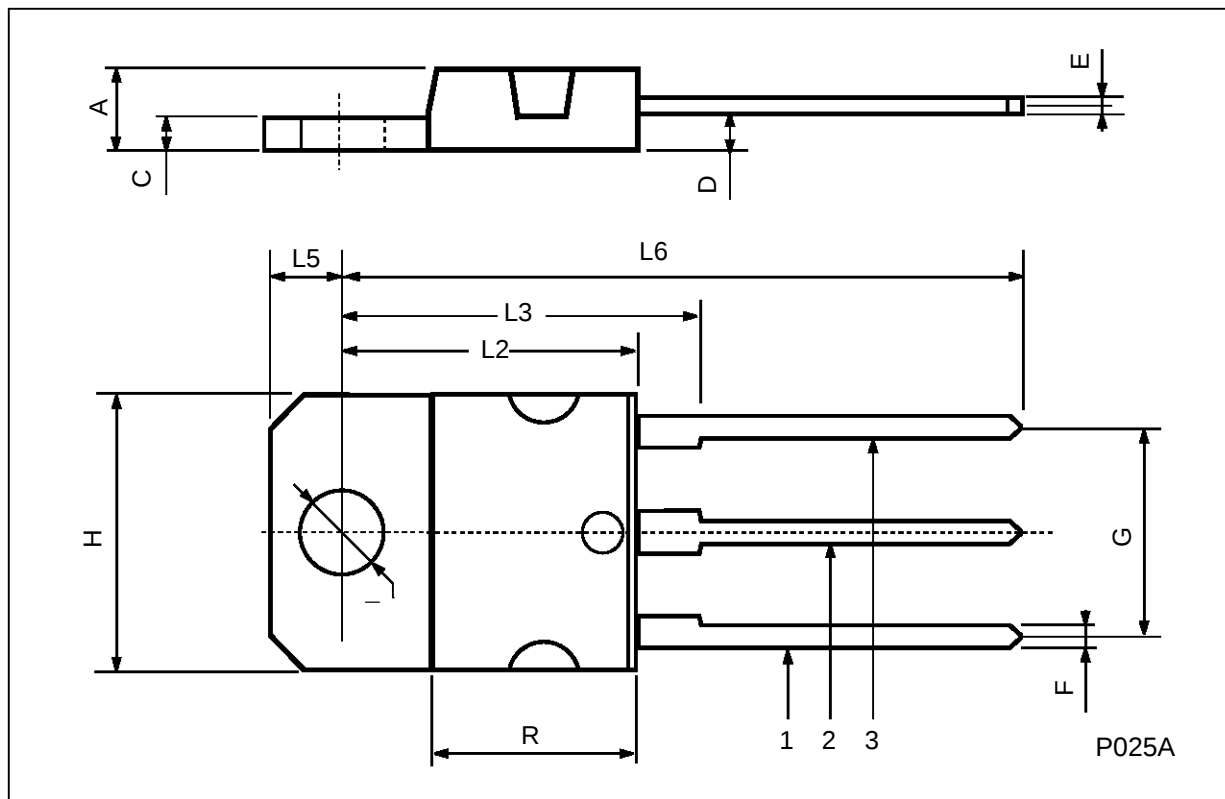
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEX}	Collector Cut-off Current	V _{CE} = V _{CEX} V _{BE} = -1.5V V _{CE} = V _{CEX} V _{BE} = -1.5V T _C = 125°C			1 3	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage	I _C = 0.2 A L = 25 mH for BUW48 for BUW49	60 80			V V
V _{EB0}	Emitter-base Voltage (I _C = 0)	I _E = 50 mA	7			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 20 A I _B = 2 A for BUW48 I _C = 40 A I _B = 4 A for BUW48 I _C = 15 A I _B = 1.5 A for BUW49 I _C = 30 A I _B = 3 A for BUW49			0.6 1.4 0.5 1.2	V V V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 40 A I _B = 4 A for BUV48 I _C = 30 A I _B = 3 A for BUV49			2.1 2	V V
f _T	Transition frequency	I _C = 1 A V _{CE} = 15 V f = 1MHz		8		MHz
t _{on} t _s t _f	RESISTIVE LOAD Turn-on Time Storage Time Fall Time	for BUW48 V _{CC} = 60 V I _C = 40 A I _{B1} = -I _{B2} = 4 A		1.2 0.6 0.17	1.5 1.1 0.25	μs μs μs
t _s t _f	Storage Time Fall Time	for BUW48 V _{CC} = 60 V I _C = 40 A I _{B1} = -I _{B2} = 4 A			1.65 0.5	μs μs
t _{on} t _s t _f	Turn-on Time Storage Time Fall Time	for BUW49 V _{CC} = 80 V I _C = 30 A I _{B1} = -I _{B2} = 3 A		0.8 0.6 0.15	1.2 1.1 0.25	μs μs μs
t _s t _f	Storage Time Fall Time	for BUW49 V _{CC} = 80 V I _C = 30 A I _{B1} = -I _{B2} = 3 A			1.65 0.5	μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle = 1.5 %

TO-218 (SOT-93) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		4.9	0.185		0.193
C	1.17		1.37	0.046		0.054
D		2.5			0.098	
E	0.5		0.78	0.019		0.030
F	1.1		1.3	0.043		0.051
G	10.8		11.1	0.425		0.437
H	14.7		15.2	0.578		0.598
L2	–		16.2	–		0.637
L3		18			0.708	
L5	3.95		4.15	0.155		0.163
L6		31			1.220	
R	–		12.2	–		0.480
Ø	4		4.1	0.157		0.161



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