

HIGH POWER NPN SILICON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED
- VERY LOW SATURATION VOLTAGE AND HIGH GAIN

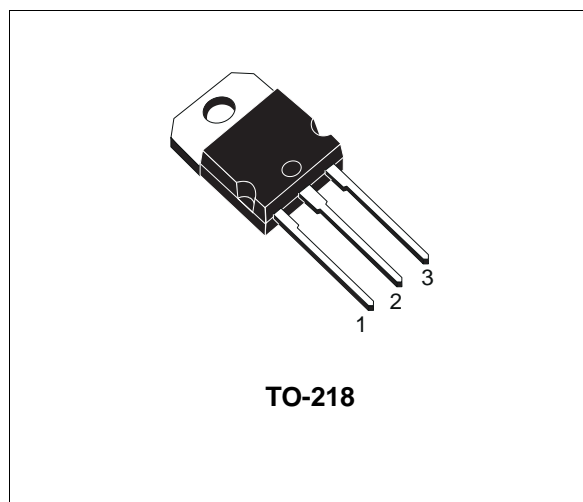
APPLICATION

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

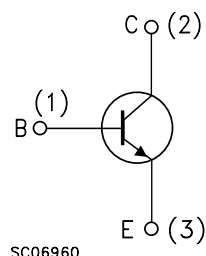
DESCRIPTION

The BUW48 and BUW49 are Multiepitaxial planar NPN transistor in TO-218 plastic package.

It's intended for use in high frequency and efficiency converters such as motor controllers and industrial equipment.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUW48	BUW49	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	120	160	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	60	80	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7		V
I_C	Collector Current	30		A
I_{CM}	Collector Peak Current	45	40	A
I_B	Base Current	8	6	A
I_{BM}	Base Peak Current	12	10	A
P_{tot}	Total Power Dissipation at $T_{case} < 25\text{ }^\circ\text{C}$	150		W
T_{stg}	Storage Temperature	-65 to 175		$^\circ\text{C}$
T_j	Max Operating Junction Temperature	175		$^\circ\text{C}$

BUW48 / BUW49**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 = 0.2A 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 = 20A I _B = 2A for BUW48 I _c = 40A I _B = 4A for BUW49 I _c = 15A I _B = 1.5A for BUW48 I _c = 30A I _B = 3A for BUW49			0.6 1.4 0.5 1.2	V V V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _c = 40A I _B = 4A for BUW48 I _c = 30A I _B = 3A for BUW49			2.1 2	V V
f _T	Transition Frequency	I _c = 1A V _{CE} = 15V f = 15 MHz		8		MHz

RESISTIVE LOAD

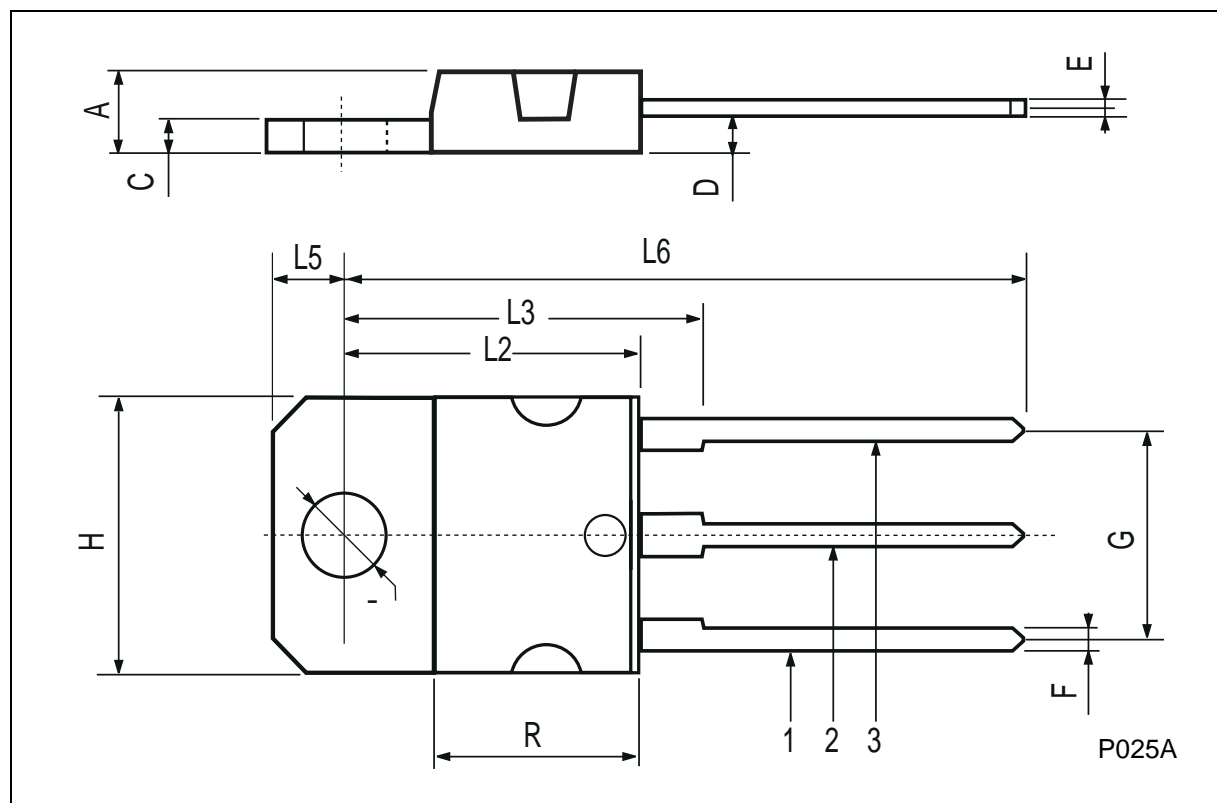
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{on} t _s t _f	Turn-on Time Storage Time Fall Time	for BUW48 V _{CC} = 60V I _c = 40A I _{B1} = -I _{B2} = 4A		1.2 0.6 0.17	1.5 1.1 0.25	μs μs μs
t _s t _f	Storage Time Fall Time	for BUW48 V _{CC} = 60V I _c = 40A I _{B1} = -I _{B2} = 4A			1.65 0.5	μs μs
t _{on} t _s t _f	Turn-on Time Storage Time Fall Time	for BUW49 V _{CC} = 80V I _c = 30A I _{B1} = -I _{B2} = 4A		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} = 80V I _c = 30A I _{B1} = -I _{B2} = 4A			1.65 0.5	μs μs

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

BUW48 / BUW49

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
∅	4		4.1	0.157		0.161



BUW48 / BUW49

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