

BUW48
BUW49

HIGH POWER NPN SILICON TRANSISTORS

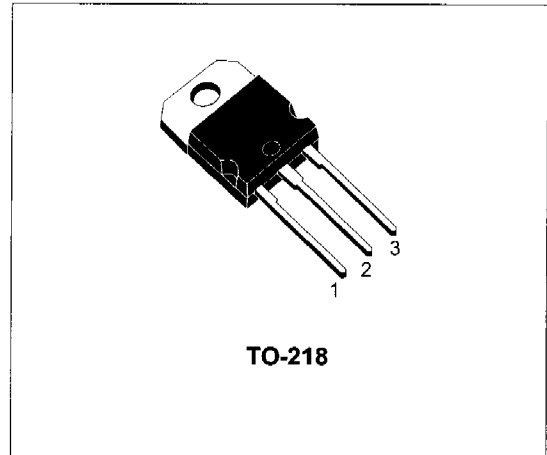
- SGS-THOMSON PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED
- VERY LOW SATURATION VOLTAGE AND HIGH GAIN

APPLICATION

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

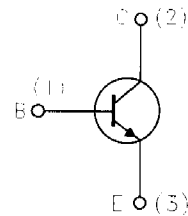
DESCRIPTION

The BUW48 and BUW49 are Multi-epitaxial 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.



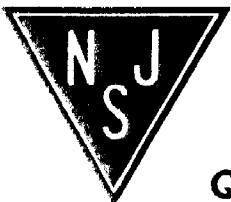
TO-218

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 $T_{case} < 25^\circ C$	150		W
T_{stg}	Storage Temperature	-65 to 175		$^\circ C$
T_j	Max Operating Junction Temperature	175		$^\circ C$



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BUW48 / BUW49

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1	$^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current	$V_{CE} = V_{CEX}$ $V_{BE} = -1.5V$ $V_{CE} = V_{CEX}$ $V_{BE} = -1.5V$ $T_c = 125^{\circ}C$			1 3	mA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5V$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 0.2A$ $L = 25mH$ for BUW48 for BUW49	60 80			V V
V_{EB0}	Emitter-base Voltage ($I_C = 0$)	$I_E = 50mA$	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	$I_C = 1A$ $V_{CE} = 15V$ $f = 15MHz$		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 %

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

