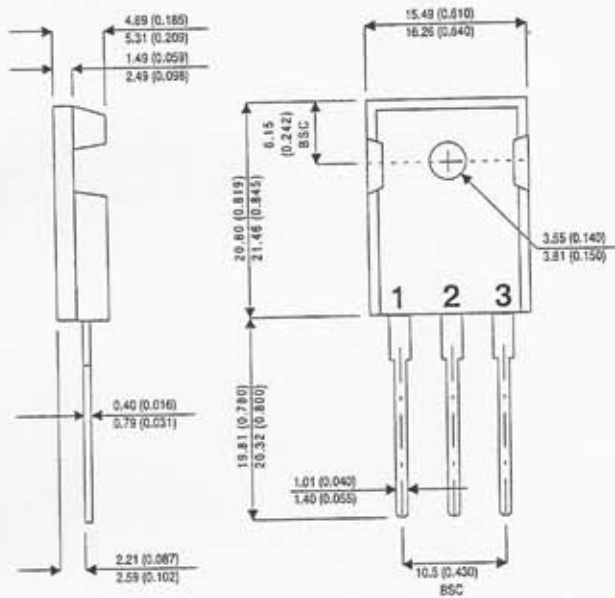


MECHANICAL DATA
Dimensions in mm (inches)



TO-247

PIN 1 - Base

PIN 2 - Emitter

PIN 3 - Collector.

**NPN
MULTI-EPITAXIAL
POWER
TRANSISTORS**

FEATURES

- LOW $V_{CE(sat)}$
- FAST SWITCHING
- HIGH CURRENT
- HIGH RELIABILITY

APPLICATIONS

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

Suitable for high current, high speed, low voltage applications.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

		BUW48-247	BUW49-247
V_{CEV}	Collector - Emitter Voltage ($V_{BE} = -1.5V$)	120V	160V
V_{CEO}	Collector - Base Voltage ($I_B = 0$)	60V	80V
V_{EBO}	Emitter - Base Voltage ($I_C = 0$)	7V	7V
I_C	Collector Current	30A	30A
$I_{C(pk)}$	Peak Collector Current ($t_p = 10ms$)	45A	40A
I_B	Base Current	8A	6A
$I_{B(pk)}$	Peak Base Current ($t_p = 10ms$)	12A	10A
P_{tot}	Total Power Dissipation	150W	150W
T_{STG}	Storage Temperature Range	-55 to +175°C	-55 to +175°C
T_J	Maximum Operating Junction Temperature	+175°C	+175°C
$R_{\theta JC}$	Thermal Resistance Junction - Case	1.0°C/W Max.	1.0°C/W Max.

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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$ Collector - Emitter Sustaining Voltage	$I_C = 0.2A$ BUW48	60			V
	$L = 25mH$ BUW49	80			
$V_{(BR)EBO}$ Emitter - Base Breakdown Voltage	$I_C = 0$ $I_E = 50mA$	7			
I_{CEX} Collector Cut-off Current	$V_{CE} = V_{CEX}$ $V_{BE} = -1.5V$ $T_J = 125^{\circ}C$			1.0	mA
				3.0	
I_{EBO} Emitter Cut-off Current	$I_C = 0$ $V_{BE} = -5V$			1.0	
$V_{CE(sat)^*}$ Collector - Emitter Saturation Voltage	$I_C = 20A$ $I_B = 2.0A$ BUW48			0.6	V
	$I_C = 40A$ $I_B = 4.0A$ BUW49			1.4	
	$I_C = 15A$ $I_B = 1.5A$ BUW48			0.5	
	$I_C = 30A$ $I_B = 3.0A$ BUW49			1.2	
$V_{BE(sat)^*}$ Base - Emitter Saturation Voltage	$I_C = 40A$ $I_B = 4.0A$ BUW48			2.1	
	$I_C = 30A$ $I_B = 3.0A$ BUW49			2.0	
f_T Transition Frequency	$f = 15MHz$ $V_{CE} = 15V$ $I_C = 1A$		8.0		MHz

DYNAMIC CHARACTERISTICS BUW48 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{on} Turn-On Time	$V_{CC} = 60V$ $I_C = 40A$ $I_{B1} = -I_{B2} = 4A$		1.2	1.5	μs
t_s Storage Time	$V_{CC} = 60V$ $I_C = 40A$ $I_{B1} = -I_{B2} = 4A$ $T_J = 100^{\circ}C$		0.6	1.1	
				1.65	
t_f Fall Time	$V_{CC} = 60V$ $I_C = 40A$ $I_{B1} = -I_{B2} = 4A$ $T_J = 100^{\circ}C$		0.17	0.25	
				0.5	

DYNAMIC CHARACTERISTICS BUW49 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{on} Turn-On Time	$V_{CC} = 80V$ $I_C = 30A$ $I_{B1} = -I_{B2} = 4A$		0.8	1.2	μs
t_s Storage Time	$V_{CC} = 80V$ $I_C = 30A$ $I_{B1} = -I_{B2} = 4A$ $T_J = 100^{\circ}C$		0.6	1.1	
				1.65	
t_f Fall Time	$V_{CC} = 80V$ $I_C = 30A$ $I_{B1} = -I_{B2} = 4A$ $T_J = 100^{\circ}C$		0.15	0.25	
				0.5	

* Pulse Test: $t_p = 300\mu s$, $\delta \leq 2\%$

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