MOSPEC

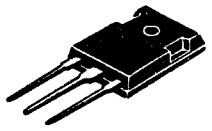
HIGH VOLTAGE POWER TRANSISTOR

NPN
BUW12
BUW12A

The BUW12 and BUW12A Type are a fast switching high voltage transistor,more specially intended for operating in industrial.

FEATURES:
* Collector-Emitter Sustaining Voltage -
  $V_{CEO(SUS)}$ = 400 V (Min.) - BUW12
  = 450 V (Min.) - BUW12A
* Low Collector-Emitter Saturation Voltage -
  $V_{CE(sat)}$ = 1.5V (Max.) @ I_C = 6.0 A, I_B = 1.2 A

8 AMPERE
POWER
TRANSISTORS
400-450 VOLTS
125 WATTS



TO-247(3P)

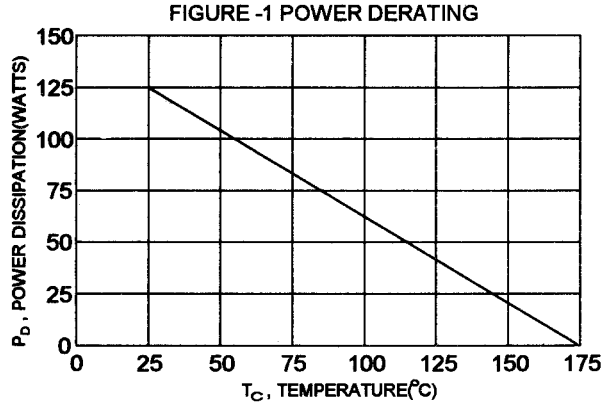
MAXIMUM RATINGS

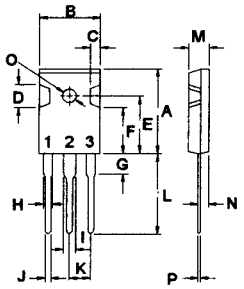
Characteristic	Symbol	BUW12	BUW12A	Unit
Collector-Emitter Voltage	V_{CEO}	400	450	V
Collector-Emitter Voltage (V_{BE}=0)	V_{CES}	850	1000	V
Emitter-Base Voltage	V_{EBO}	9.0		V
Collector Current - Continuous - Peak	I_C	8.0 20		A
Base Current - Continuous	I_B	4.0		A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	125 0.833		W W/°C
Operating and Storage Junction Temperature Range	T_J,T_{STG}	- 65 to +175		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.2	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.COLLECTOR
3.EMITTER

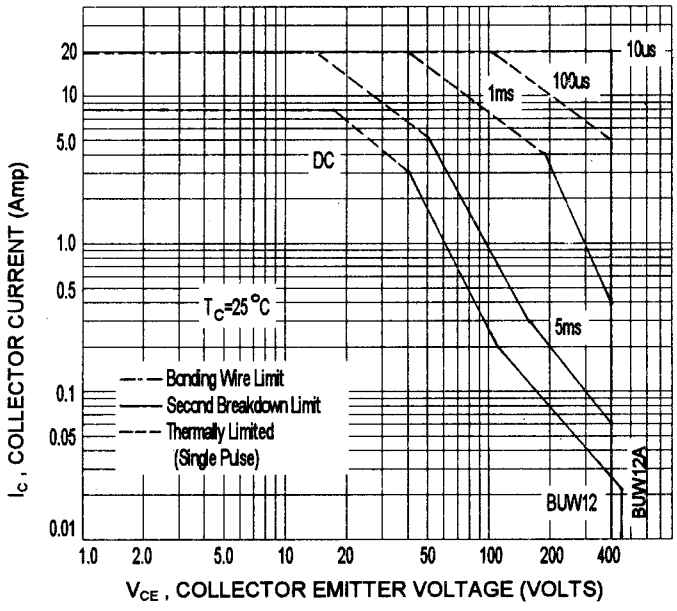
DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 100 mA, I_B = 0, L= 25 mH)	BUW12 BUW12A	$V_{CEO(SUS)}$	 400 450		V
Collector Cutoff Current (V_{CE} = 850 V, V_{BE}= 0) (V_{CE} = 1000 V, V_{BE} = 0)	 BUW12 BUW12A	I_{CES}		 1.0 1.0	mA
Emitter Cutoff Current (V_{EB}= 9.0 V , I_C = 0)		I_{EBO}		 10	mA
ON CHARACTERISTICS (1)					
Collector - Emitter Saturation Voltage (I_C= 6.0 A, I_B = 1.2 A)		$V_{CE(sat)}$		 1.5	V
Base - Emitter Saturation Voltage (I_C= 6.0 A, I_B = 1.2 A)		$V_{BE(sat)}$		 1.5	V
SWITCHING CHARACTERISTICS					
Turn On Time	V_{CC}= 240V, I_C=6.0A I_{B1}= 1.2A, I_{B2}= -1.2A	t_{on}		1.0	us
Storage Time		t_s		4.0	us
Fall Time		t_f		0.8	us

(1) Pulse Test: Pulse width ≦ 300 us , Duty Cycle ≦ 2.0%

ACTIVE-REGION SAFE OPERATING AREA



There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of SOA curve is base on $T_{J(PK)}$=175 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤175°C,At high case temperatures, thermal limita - tion will reduce the power that can be handled to values less than the limitations imposed by second breakdown.