

NPN SILICON POWER TRANSISTORS

... designed for use in general purpose power amplifier application

FEATURES:

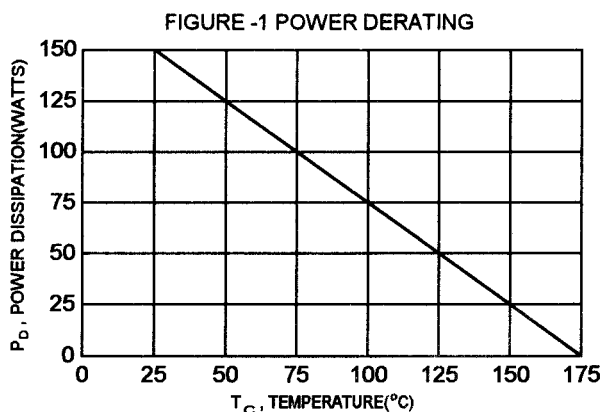
- * Very Low Saturation Voltage and High Gain for reduced load Operation.
- * Faster Switching Times
- * Lower Switching Losses
- * Lower On State Voltage Drop

MAXIMUM RATINGS

Characteristic	Symbol	BUW50	Unit
Collector-Emitter Voltage	V_{CEO}	125	V
Collector-Emitter Voltage $V_{BE} = -1.5V$	V_{CEV}	250	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	25 50	A
Total Power Dissipation @ $T_C = 25^\circ C$ Derate above $25^\circ C$	P_D	150 1.0	W W/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +175	$^\circ C$

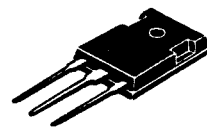
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.0	$^\circ C/W$

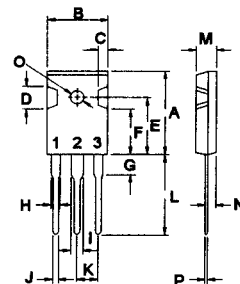


**NPN
BUW50**

**25 AMPERE
POWER
TRANSISTORS
125 VOLTS
150 WATTS**



TO-247(3P)



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 ($T_c = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage (1) ($I_C = 0.2\text{ A}$, $I_B = 0$, $L = 25\text{ mH}$)	$V_{CEO(sus)}$	125		V
Emitter-Base Voltage ($I_E = 20\text{ mA}$, $I_C = 0$)	V_{EBO}	7.0		V
Collector Cutoff Current ($V_{CE} = 250\text{ V}$, $V_{BE} = -1.5\text{ V}$)	I_{CEV}		100	μA
Emitter Cutoff Current ($V_{EB} = 5.0\text{ V}$, $I_C = 0$)	I_{EBO}		1.0	mA

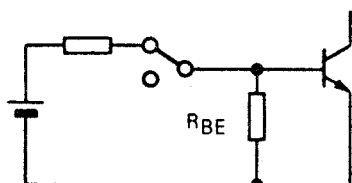
ON CHARACTERISTICS (1)

Collector-Emitter Saturation Voltage ($I_C = 10\text{ A}$, $I_B = 0.5\text{ A}$) ($I_C = 20\text{ A}$, $I_B = 2.0\text{ A}$)	$V_{CE(sat)}$		0.9 1.0	V
Base-Emitter Saturation Voltage ($I_C = 20\text{ A}$, $I_B = 2.0\text{ A}$)	$V_{BE(sat)}$		1.6	V

SWITCHING CHARACTERISTICS

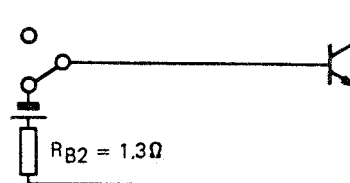
Turn-on Time	$V_{CC} = 60\text{ V}$, $I_C = 10\text{ A}$ $I_{B1} = 1.0\text{ A}$ $PW = 20\text{ }\mu\text{s}$	t_{on}	1.9	μs
Storage Time		t_s	1.5	μs
Fall Time		t_f	0.5	μs

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$



TRANSISTOR FORWARD BIASED

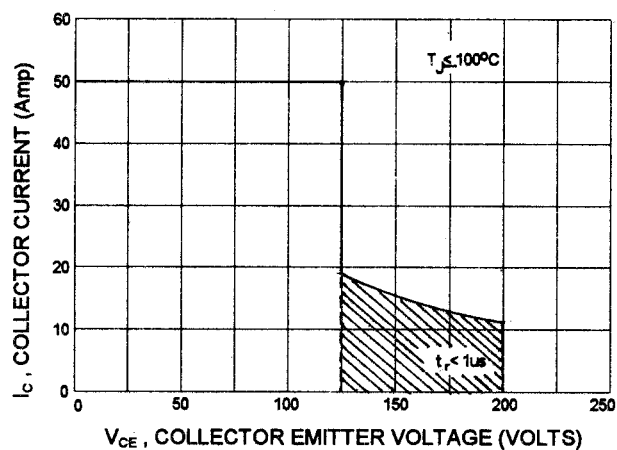
- During the turn-on
- During the turn-off without negative base-emitter voltage and $4.7\Omega \leq R_{BE} \leq 50\Omega$



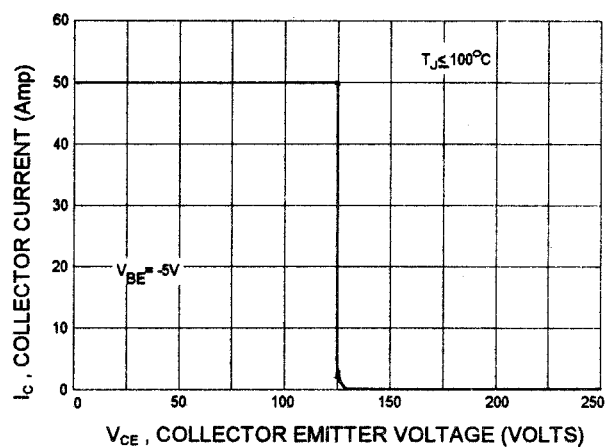
TRANSISTOR FORWARD BIASED

- During the turn-off without negative base-emitter voltage

FORWARD BIASED SAFE OPERATING AREA



REVERSE BIASED SAFE OPERATING AREA



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