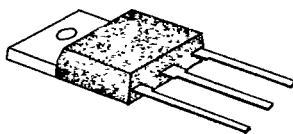


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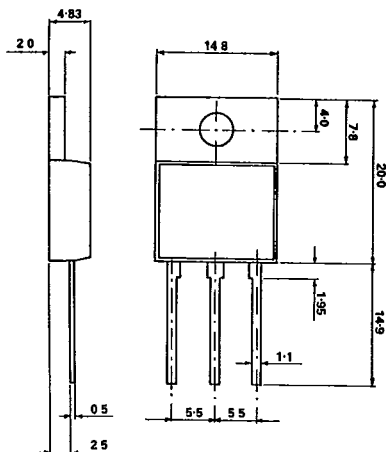
BUW 61

NPN MULTI-EPITAXIAL POWER TRANSISTOR

MECHANICAL DATA

Dimensions in mm

Suitable for applications requiring
low saturation voltage and
high gain for reduced load operation



FEATURES

- VERY LOW $V_{CE(SAT)}$
- HIGH CURRENT
- FAST SWITCHING

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROLS
- POWER SWITCHING

SOT93

(ALSO AVAILABLE IN CHIP FORM)

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

V_{CEX}	Collector-emitter voltage ($V_{BE} = -1.5\text{V}$)	300V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	200V
V_{EBO}	Emitter-base voltage	7V
I_E	Emitter current	40A
$I_{E(PK)}$	Peak emitter current	75A
I_B	Base current	8A
$I_{B(PK)}$	Peak base current	15A
P_{tot}	Total dissipation at $T_{CASE} = 25^{\circ}\text{C}$	175W
T_{stg}	Storage temperature	-55 to 200°C
T_J	Maximum operating junction temperature	200°C
R_{th}	Thermal resistance (junction-case)	Max. 0.7°C/W

SEMELAB LTD., TELEPHONE 8201-8502

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T-33-15

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CE(ISO)}$ Collector-emitter sustaining voltage	$I_B = 0, I_C = 0.2\text{A}$ $L = 25\text{mH}$	200			V
$V_{(BR)EBO}$ Emitter base breakdown voltage	$I_C = 0$ $I_E = 50\text{mA}$	7			V
I_{CEX} Collector cut-off current	$V_{BE} = -1.5\text{V}$ $V_{CE} = V_{CEX}$ $T_J = 100^{\circ}\text{C}$			1.0 4.0	mA mA
I_{CER} Collector cut-off current	$R_{BE} = 10\Omega$ $V_{CE} = V_{CEX}$ $T_J = 100^{\circ}\text{C}$			1.0 5.0	mA mA
I_{EBO} Emitter cut-off current	$I_C = 0$ $V_{BE} = -5\text{V}$			1.0	mA
$V_{CE(sat)^*}$ Collector-emitter saturation voltage	$I_C = 25\text{A}$ $I_B = 2.5\text{A}$ $T_J = 100^{\circ}\text{C}$			0.9 1.5	V V
$V_{BE(sat)^*}$ Emitter-base saturation voltage	$I_C = 25\text{A}$ $I_B = 2.5\text{A}$ $T_J = 100^{\circ}\text{C}$			1.4 1.4	V V

SWITCHING CHARACTERISTICS ($T_{CASE} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
TURN-ON SWITCHING CHARACTERISTICS					
di/dt On state collector current rate of rise	$R_C = 0$ $V_{CC} = 160\text{V}$ $I_{B1} = 3.75\text{A}$ $t_p = 3\mu\text{s}$ $T_J = 100^{\circ}\text{C}$	60			A/ μs
TURN-OFF SWITCHING CHARACTERISTICS - INDUCTIVE LOAD, WITH NEGATIVE BIAS					
t_{st} Carrier storage time	$I_C = 50\text{A}$ $V_{clamp} = 160\text{V}$		2.4		μs
t_f Fall time	$I_{B1} = 2.5\text{A}$ $L_C = 0.32\text{mH}$ $V_{CC} = 160\text{V}$ $R_{BB} = 1\Omega$		0.25		μs
t_c V_{CE}/I_C Crossover time	$V_{BB} = -5\text{V}$ $T_J = 100^{\circ}\text{C}$		0.5		μs

* Pulse test $t_p = 300\mu\text{s}$ $\delta \leq 2\%$