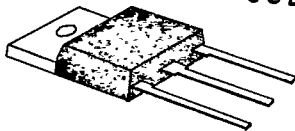


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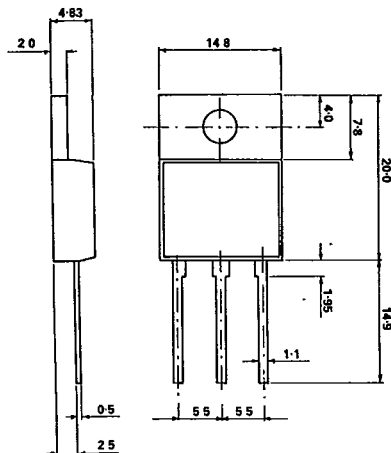
BUX 10P

NPN MULTI-EPITAXIAL POWER TRANSISTOR

Suitable for high current, high speed
and high power applications

MECHANICAL DATA

Dimensions in mm



FEATURES

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROLS

SOT93

(ALSO AVAILABLE IN CHIP FORM)

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

V_{CBO}	Collector-base voltage ($I_E = 0$)	160V
V_{CEX}	Collector-emitter voltage ($V_{BE} = -1.5V$)	160V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	125V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	7V
I_C	Collector current	25A
$I_{C(PK)}$	Peak collector current ($t_p = 10\text{ms}$)	30A
I_B	Base current	5A
P_{tot}	Total dissipation at $T_{CASE} = 25^{\circ}\text{C}$	150W
T_{stg}	Storage temperature	-55 to 200°C
T_J	Maximum operating junction temperature	200°C
R_{th}	Thermal resistance (junction-case)	Max. 1.17°C/W

SEMELAB LTD., TELEPHONE

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BUX 10P

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CE0(sus)}$ Collector-emitter sustaining voltage	$I_B = 0$ $I_C = 200\text{mA}$	125			V
I_{CEX} Collector cut-off current	$V_{CE} = 160\text{V}$ $V_{BE} = -1.5\text{V}$ $T_{CASE} = 125^{\circ}\text{C}$			1.5 6.0	mA mA
I_{CEO} Collector cut-off current	$I_B = 0$ $V_{CE} = 100\text{V}$			1.5	mA
I_{EBO} Emitter cut-off current	$I_C = 0$ $V_{BE} = 5\text{V}$			1.0	mA
V_{EBO} Emitter-base voltage	$I_C = 0$ $I_E = 50\text{mA}$	7.0			V
$V_{CE(sat)*}$ Collector-emitter saturation voltage	$I_C = 10\text{A}$ $I_B = 1\text{A}$ $I_C = 20\text{A}$ $I_B = 2\text{A}$		0.3 0.7	0.6 1.2	V V
$V_{BE(sat)*}$ Emitter-base saturation voltage	$I_C = 20\text{A}$ $I_B = 2\text{A}$		1.6	2.0	V
h_{FE} DC Current gain	$I_C = 10\text{A}$ $V_{CE} = 2\text{V}$ $I_C = 20\text{A}$ $V_{CE} = 4\text{V}$	20 10		60	— —
$I_{S.B}$ Second breakdown collector current	$V_{CE} = 30\text{V}$ $t = 1\text{s}$ $V_{CE} = 48\text{V}$ $t = 1\text{s}$	5.0 1.0		A	A
f_T Transition frequency	$I_C = 1\text{A}$ $V_{CE} = 15\text{V}$ $f = 10\text{MHz}$	8.0			MHz

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{on} On time	$I_C = 20\text{A}$ $I_{B1} = 2\text{A}$ $V_{CC} = 30\text{V}$		0.5	1.5	μs
t_s Storage time	$I_C = 20\text{A}$ $I_{B1} = 2\text{A}$		0.6	1.2	μs
t_f Fall time	$V_{CC} = 30\text{V}$ $I_{B2} = -2\text{A}$		0.15	0.3	μs
Clamped $E_{S.B}$ collector current	$V_{clamp} = 125\text{V}$ $L = 500\mu\text{H}$	20			A

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