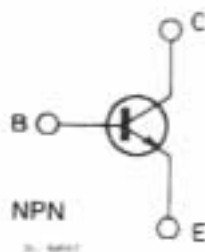


HIGH CURRENT, HIGH SPEED, POWER TRANSISTOR

ADVANCE DATA

DESCRIPTION

The BUX10P is a silicon multiepitaxial planar NPN transistor in SOT-93 case, intended for use in switching and linear applications in military and industrial equipment.


INTERNAL SCHEMATIC DIAGRAM

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-base Voltage ($I_E = 0$)	160	V
V_{CEX}	Collector-emitter Voltage ($V_{BE} = 1.5$ V)	160	V
V_{CEO}	Collector-emitter ($I_B = 0$)	125	V
V_{EB0}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	25	A
I_{CM}	Collector Peak Current ($t_D = 10$ ms)	30	A
I_B	Base Current	5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	106	W
T_{stg}	Storage Temperature	- 65 to 150	°C
T_j	Junction Temperature	150	°C

THERMAL DATA

$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	1.17	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = 100\text{ V}$			1.5	mA
I_{CEX}	Collector Cutoff Current	$V_{CE} = 160\text{ V}$ $V_{BE} = -1.5\text{ V}$ $T_{case} = 125\text{ °C}$ $V_{CE} = 160\text{ V}$ $V_{BE} = -1.5\text{ V}$			1.5 6	mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			1	mA
$V_{CE(sus)}$	Collector-emitter Sustaining Voltage	$I_C = 200\text{ mA}$	125			V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	$I_E = 50\text{ mA}$	7			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
$V_{BE(sat)}$	Base-emitter Saturation Voltage	$I_C = 20\text{ A}$ $I_B = 2\text{ A}$		1.6	2	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	$V_{CE} = 30\text{ V}$ $t = 1\text{ s}$ $V_{CE} = 48\text{ V}$ $t = 1\text{ s}$	3.53 1			A A
f_T	Transition Frequency	$I_C = 1\text{ A}$ $V_{CE} = 15\text{ V}$ $f = 10\text{ MHz}$	8			MHz
t_{on}	Turn-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	$I_C = 20\text{ A}$ $I_{B1} = I_{B2} = 2\text{ A}$ $V_{CC} = 30\text{ V}$		0.6	1.2	μs
t_f	Fall Time			0.15	0.3	μs
	Clamped E_{S-B} Collector Current	$V_{clamp} = 125\text{ V}$ $L = 500\text{ }\mu\text{H}$	20			A

Safe Operating Areas.

