

HIGH VOLTAGE NPN SILICON POWER TRANSISTOR

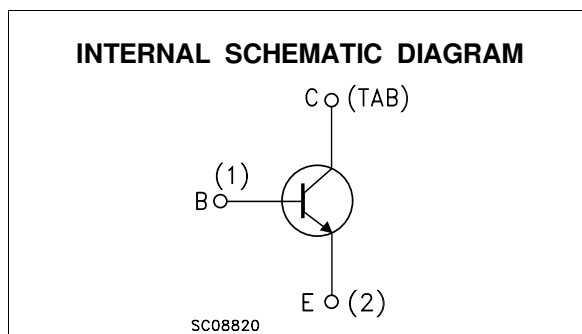
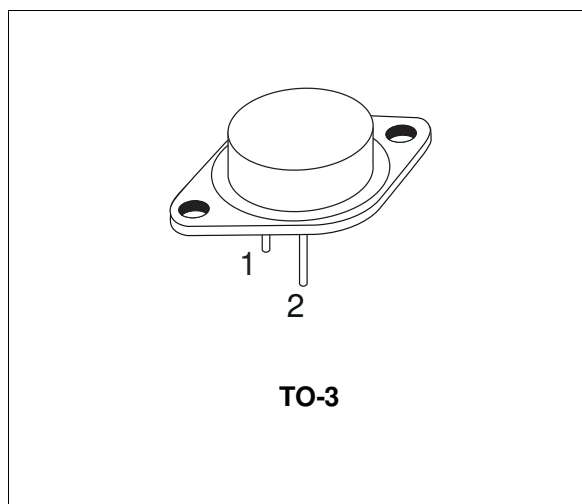
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED

APPLICATIONS

- SWITCHING REGULATORS
- MOTOR CONTROL
- HIGH FREQUENCY AND EFFICIENCY CONVERTERS

DESCRIPTION

The BUX80 is a silicon multiepitaxial mesa NPN transistor in Jedec TO-3 metal case, particularly intended for converters, inverters, switching regulators and motors control system applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter Voltage ($V_{BE} = 0$)	800	V
V_{CER}	Collector-emitter Voltage ($R_{BE} = 50\Omega$)	500	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	400	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	10	A
I_{CM}	Collector Peak Current	15	A
I_B	Base Current	5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 40^\circ C$	100	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max Operating Junction Temperature	150	$^\circ C$

BUX80

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.1	$^{\circ}\text{C}/\text{W}$
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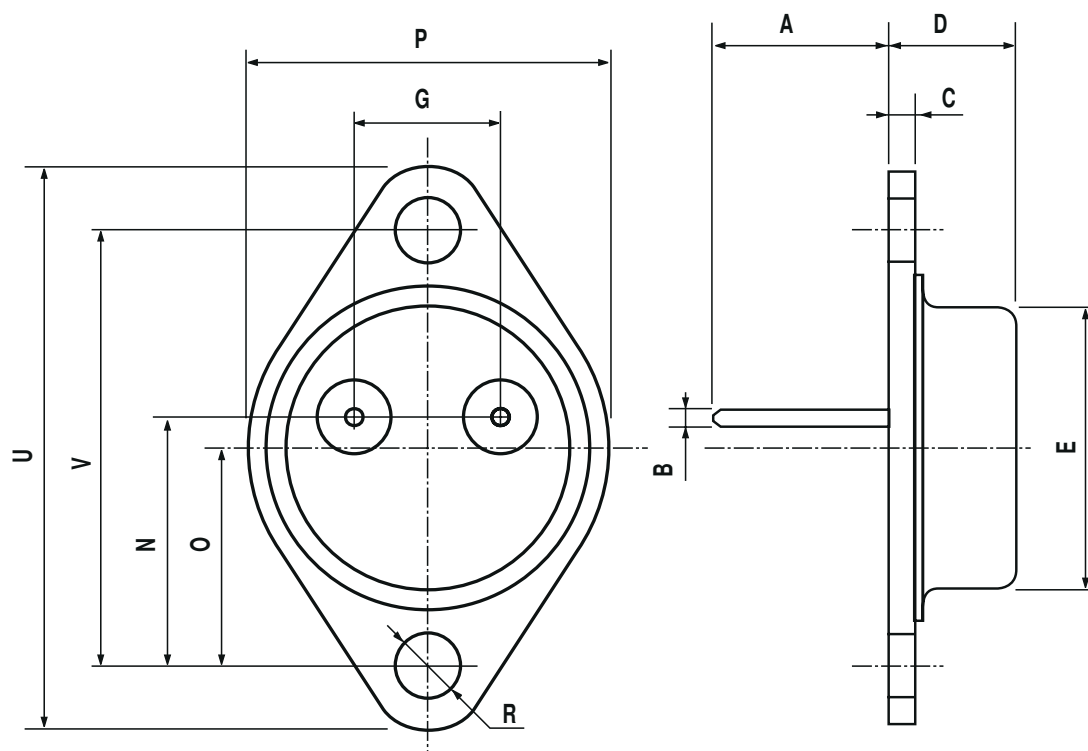
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = 800\text{ V}$ $V_{CE} = 800\text{ V}$ $T_{case} = 125^{\circ}\text{C}$			1 3	mA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{BE} = 10\text{ V}$			10	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100\text{ mA}$	400			V
$V_{CER(sus)}^*$	Collector-Emitter Sustaining Voltage ($R_{BE} = 50\ \Omega$)	$I_C = 100\text{ mA}$	500			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 5\text{ A}$ $I_B = 1\text{ A}$ $I_C = 8\text{ A}$ $I_B = 2.5\text{ A}$			1.5 3	V V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 5\text{ A}$ $I_B = 1\text{ A}$ $I_C = 8\text{ A}$ $I_B = 2.5\text{ A}$			1.4 1.8	V V
h_{FE}^*	DC Current Gain	$I_C = 1.2\text{ A}$ $V_{CE} = 5\text{ V}$		30		
t_{on}	Turn-on Time	$I_C = 5\text{ A}$ $I_{B1} = 1\text{ A}$ $V_{CC} = 250\text{ V}$			0.5	μs
t_s	Storage Time	$I_C = 5\text{ A}$ $I_{B1} = 1\text{ A}$ $I_{B2} = -2\text{ A}$ $V_{CC} = 250\text{ V}$			3.5	μs
t_f	Fall Time	$I_C = 5\text{ A}$ $I_{B1} = 1\text{ A}$ $I_{B2} = -2\text{ A}$ $V_{CC} = 250\text{ V}$			0.5	μs

* Pulsed: Pulse duration = 300 μs , duty cycle = 1.5 %

TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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