

## HIGH VOLTAGE NPN SILICON POWER TRANSISTOR

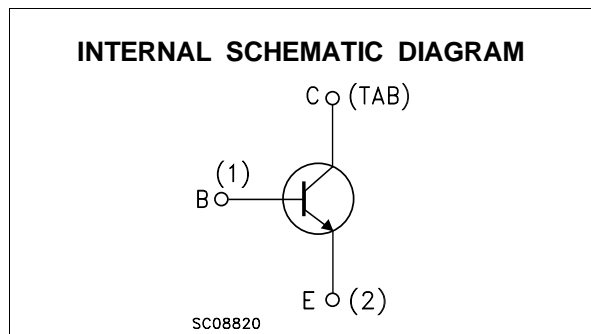
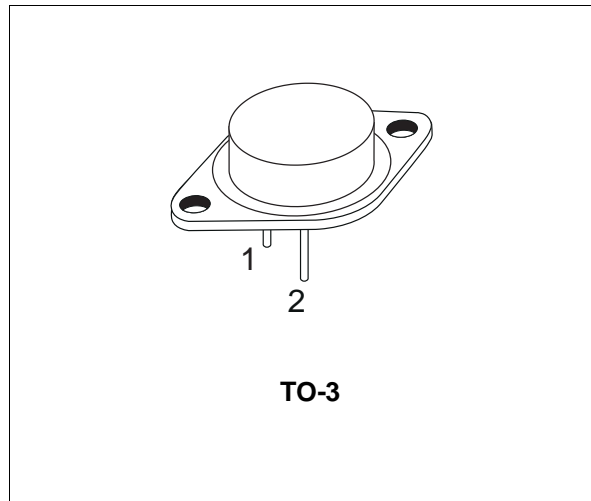
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED

### 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 <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	1.1	°C/W
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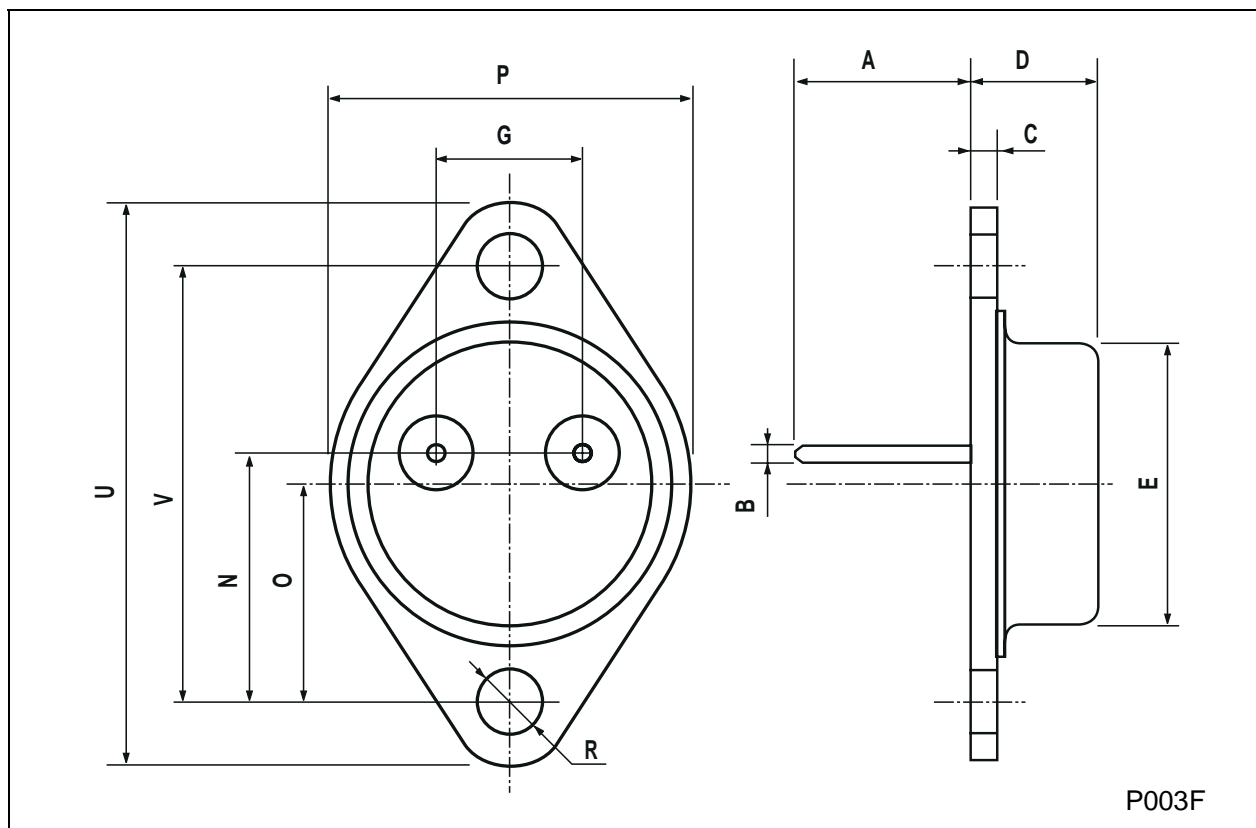
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = 800 V V <sub>CE</sub> = 800 V      T <sub>case</sub> = 125°C			1 3	mA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>BE</sub> = 10 V			10	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA	400			V
V <sub>CER(sus)*</sub>	Collector-Emitter Sustaining Voltage (R <sub>BE</sub> = 50 Ω)	I <sub>C</sub> = 100 mA	500			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5 A      I <sub>B</sub> = 1 A I <sub>C</sub> = 8 A      I <sub>B</sub> = 2.5 A			1.5 3	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5 A      I <sub>B</sub> = 1 A I <sub>C</sub> = 8 A      I <sub>B</sub> = 2.5 A			1.4 1.8	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 1.2 A      V <sub>CE</sub> = 5 V		30		
t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5 A      I <sub>B1</sub> = 1 A V <sub>CC</sub> = 250 V			0.5	μs
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 5 A      I <sub>B1</sub> = 1 A I <sub>B2</sub> = - 2 A      V <sub>CC</sub> = 250 V			3.5	μs
t <sub>f</sub>	Fall Time	I <sub>C</sub> = 5 A      I <sub>B1</sub> = 1 A I <sub>B2</sub> = - 2 A      V <sub>CC</sub> = - 250 V			0.5	μs

\* Pulsed: Pulse duration = 300μs, 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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