

HIGH CURRENT NPN SILICON TRANSISTOR

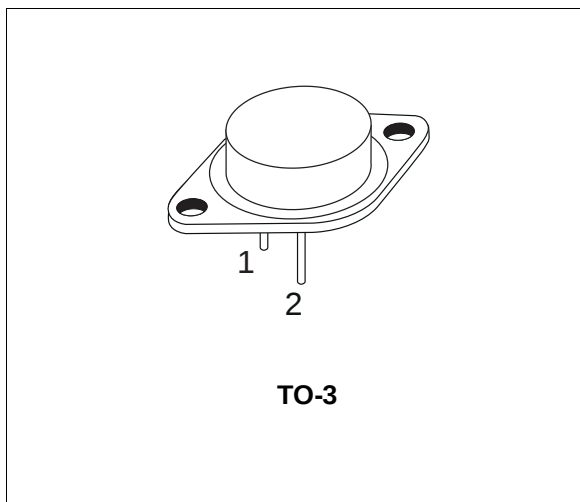
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

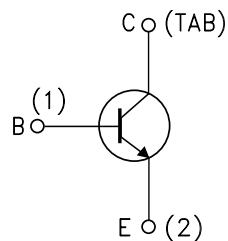
- MOTOR CONTROL
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUX12 is a silicon multiepitaxial planar NPN transistor in Jedec TO-3 metal 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_{CBO}	Collector-base Voltage ($I_E = 0$)	300	V
V_{CEX}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	300	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	250	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	20	A
I_{CM}	Collector Peak Current ($t_P = 10$ ms)	25	A
I_B	Base Current	4	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	150	W
T_{stg}	Storage Temperature	-65 to 200	°C
T_j	Max Operating Junction Temperature	200	°C

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.17	°C/W
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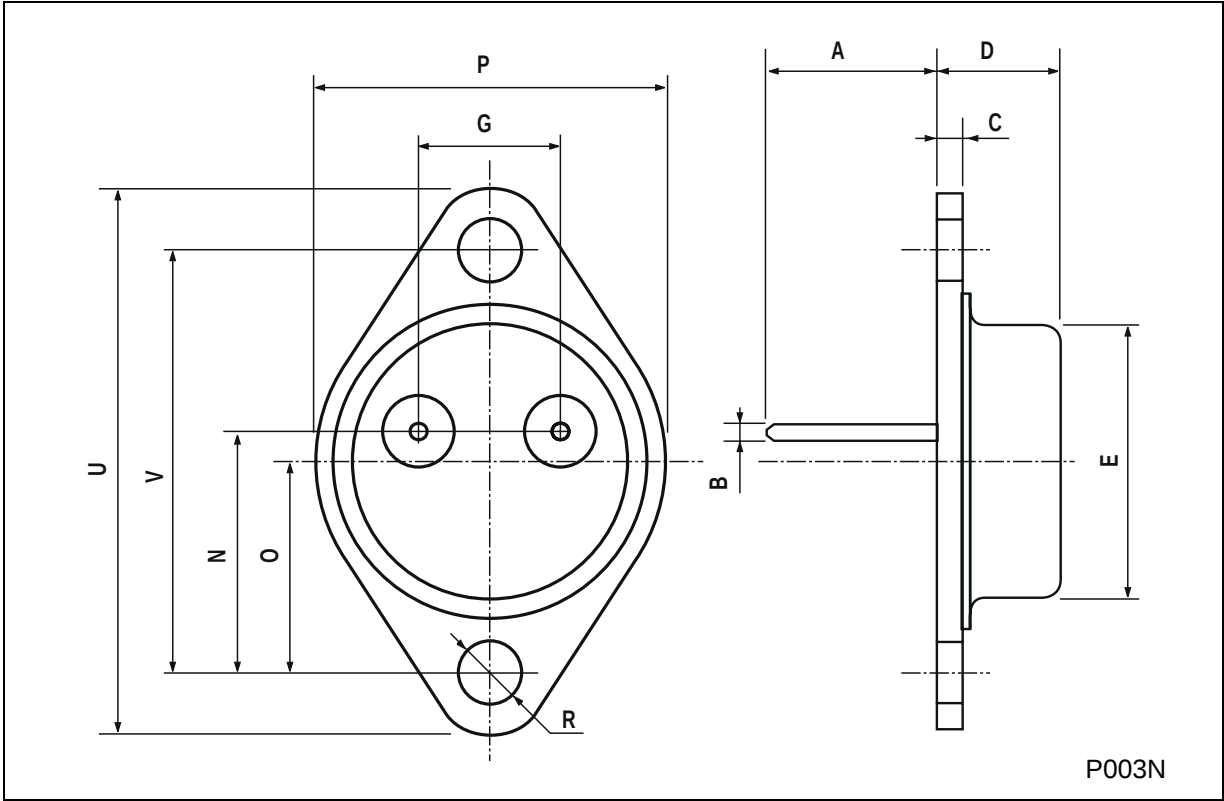
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 200 V			1.5	mA
I _{CEX}	Collector Cut-off Current	V _{CE} = 300 V T _{case} = 125 °C V _{CE} = 300 V			1.5 6	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 200 mA	250			V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	I _E = 50 mA	7			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 5 A I _C = 10 A		0.22 0.5	1 1.5	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 10 A		1.23	1.5	V
h _{FE}	DC Current Gain	I _C = 5 A I _C = 10 A	20 10		60	
I _{S/b}	Second Breakdown Collector Current	V _{CE} = 30 V V _{CE} = 140 V	t = 1 s t = 1 s	5 0.15		A A
f _T	Transistor Frequency	I _C = 1 A f = 10 MHz	V _{CE} = 15 V	8		MHz
t _{on}	Turn-on Time See fig.2	I _C = 10 A V _{CC} = 150V	I _{B1} = 1.25 A	0.28	1	μs
t _s t _f	Storage Time Fall Time See fig.2 See fig.2	I _C = 10 A I _{B2} = -1.25 A	I _{B1} = 1.25 A V _{CC} = 150V	1.45 0.23	2 0.5	μs μs
	Clamped E _{s/b} Collector Current	V _{clamp} = 250 V L = 500 μH	10			A

* Pulsed: Pulse duration = 300μs, duty cycle ≤ 2 %

TO-3 (H) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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