

HIGH CURRENT NPN SILICON TRANSISTOR

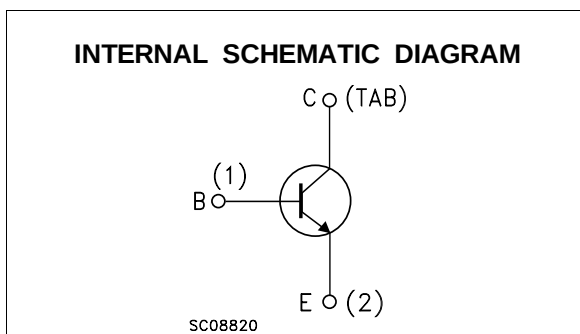
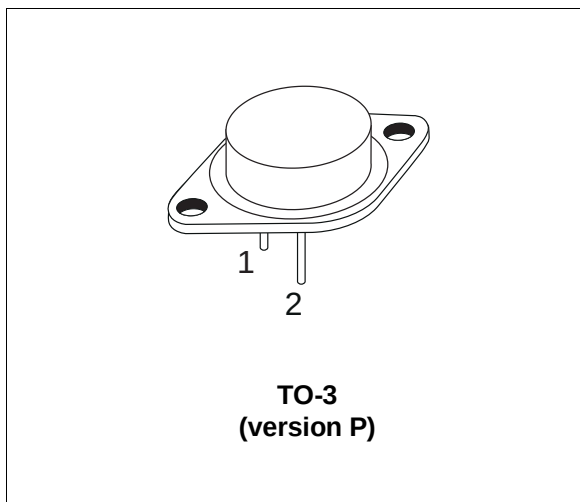
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

- MOTOR CONTROL
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- HIGH POWER TO-3 PACKAGE

DESCRIPTION

The BUX22 is a silicon multiepitaxial planar NPN transistor in modified Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.



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	40	A
I_{CM}	Collector Peak Current ($t_p = 10$ ms)	50	A
I_B	Base Current	8	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	350	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ C$
T_j	Max Operating Junction Temperature	200	$^\circ C$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.5	°C/W
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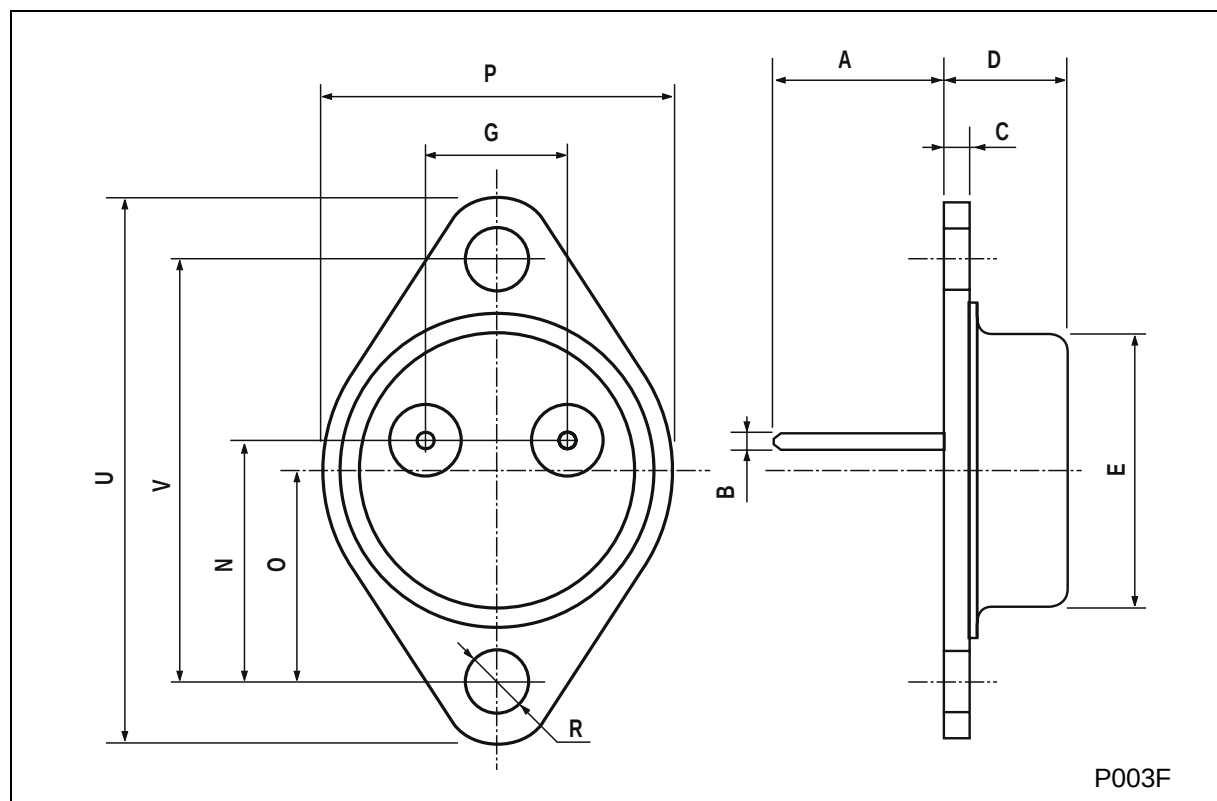
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 200 V			3	mA
I _{CEX}	Collector Cut-off Current	V _{CE} = 300 V T _{case} = 125 °C V _{CE} = 300 V			3 12	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 = 10 A I _C = 20 A		0.2 0.32	1 1.5	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 20 A I _B = 2.5 A		1.1	1.5	V
h _{FE*}	DC Current Gain	I _C = 10 A I _C = 20 A	20 10		60	
I _{S/b}	Second Breakdown Collector Current	V _{CE} = 140 V V _{CE} = 20 V	t = 1 s t = 1 s	0.15 17.5		A A
f _T	Transistor Frequency	V _{CE} = 15 V f = 10 MHz	I _C = 2 A	10		MHz
t _{on}	Turn-on Time	I _C = 20 A V _{CC} = 100 V	I _{B1} = 2.5 A	0.22	1.3	μs
t _s t _f	Storage Time Fall Time	I _C = 20 A I _{B2} = - 2.5 A	I _{B1} = 2.5 A V _{CC} = 100V	1.5 0.17	2 0.5	μs μs
	Clamped E _{s/b} Collector Current	V _{clamp} = 250 V L = 500 μH	25			A

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

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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