

HIGH CURRENT NPN SILICON TRANSISTOR

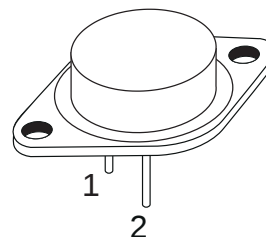
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

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

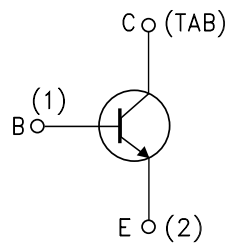
DESCRIPTION

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.



**TO-3
(version P)**

INTERNAL SCHEMATIC DIAGRAM



SC08820

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
-----------------------	----------------------------------	-----	-----	------

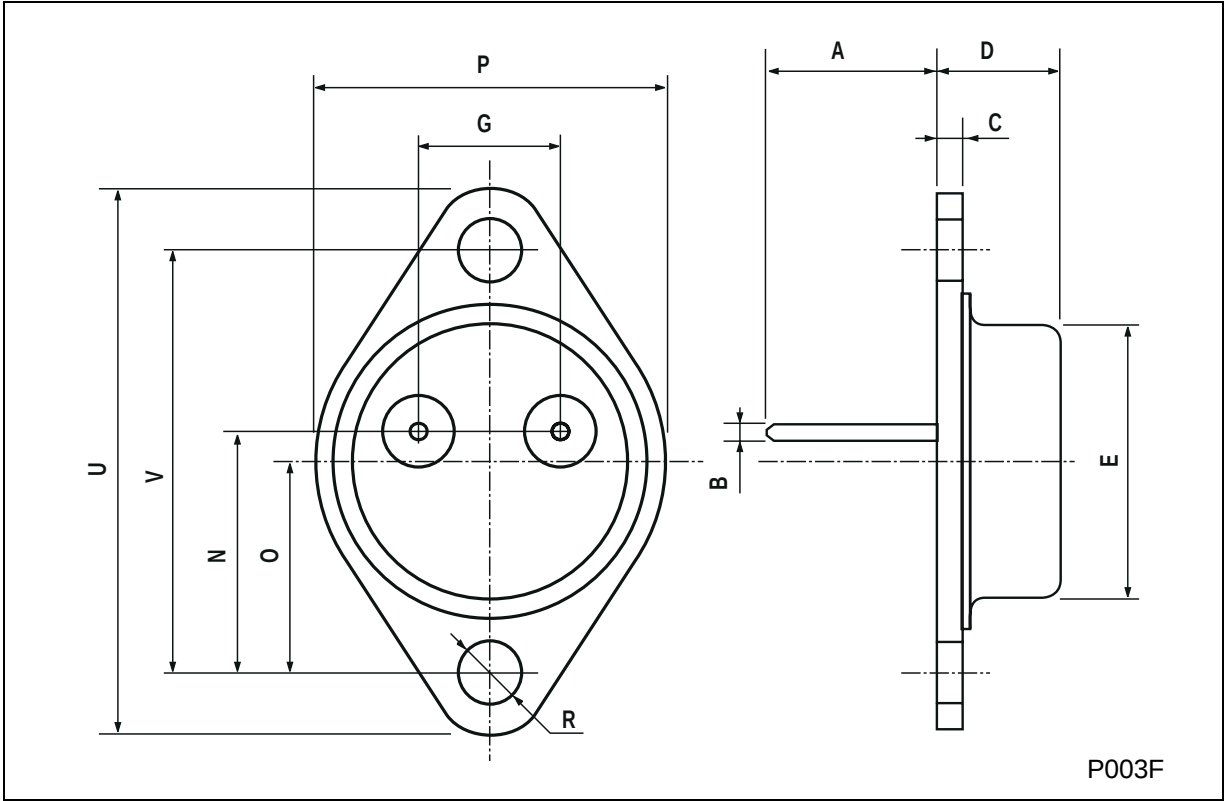
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
...