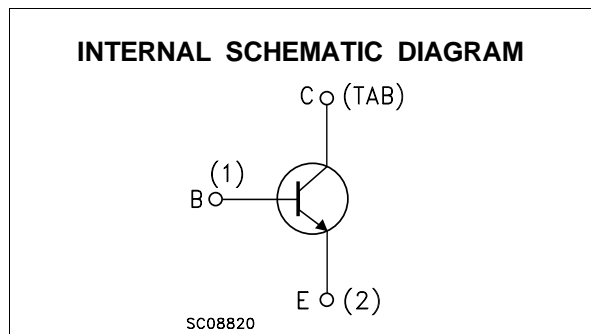
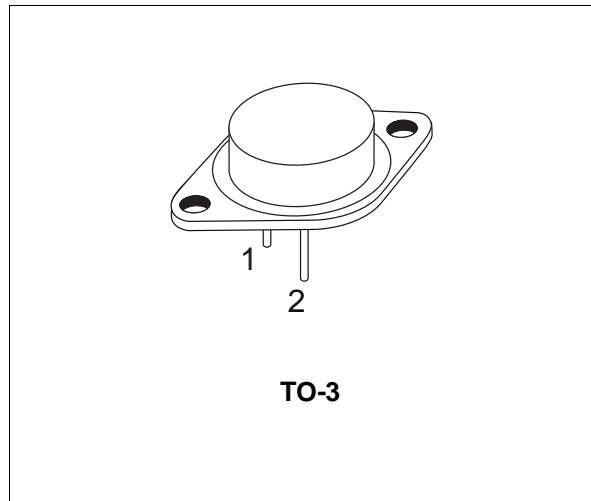


HIGH CURRENT NPN SILICON TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

DESCRIPTION

The BUR51 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_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	200	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	60	A
I_{CM}	Collector Peak Current ($t_p = 10$ ms)	80	A
I_B	Base Current	16	A
P_{tot}	Total Dissipation at $T_c \leq 25$ °C	350	W
T_{stg}	Storage Temperature	-65 to 200	°C
T_j	Max. Operating Junction Temperature	200	°C

BUR51

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.5	$^{\circ}C/W$
----------------	----------------------------------	-----	-----	---------------

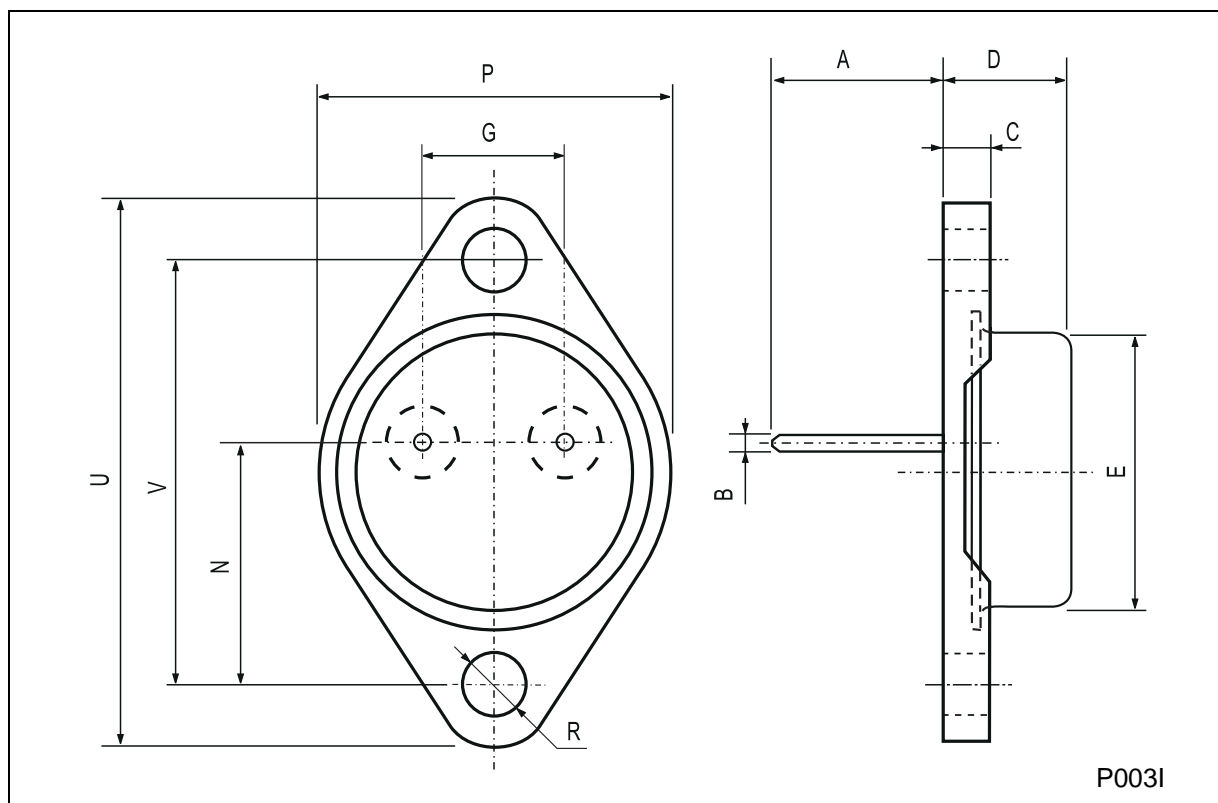
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 300 V$ $V_{CB} = 300 V$ $T_{case} = 125^{\circ}C$			0.2 2	mA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 200 V$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 7 V$			0.2	μA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 200 mA$	200			V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	$I_E = 10 mA$	10			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 30 A$ $I_B = 2 A$ $I_C = 50 A$ $I_B = 5 A$		0.9	1 1.5	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 30 A$ $I_B = 2 A$ $I_C = 50 A$ $I_B = 5 A$		1.55	1.8 2	V V
h_{FE}^*	DC Current Gain	$I_C = 5 A$ $V_{CE} = 4 V$ $I_C = 50 A$ $V_{CE} = 4 V$	20 15		100	
$I_{s/b}$	Second Breakdown Collector Current	$V_{CE} = 20 V$ $t = 1 s$	17.5			A
f_T	Transition-Frequency	$I_C = 1 A$ $V_{CE} = 5 V$ $f = 1 MHz$	10	16		MHz
t_{on}	Turn-on Time	$I_C = 50 A$ $I_{B1} = 5 A$ $V_{CC} = 100 V$		0.35	1	μs
t_s	Storage Time	$I_C = 50 A$ $I_{B1} = 5 A$ $I_{B2} = -5 A$ $V_{CC} = 100 V$		0.9	2	μs
t_f	Fall Time			0.24	0.6	μs
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 200 V$ $L = 500 \mu H$	50			A

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

TO-3 (I) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11	11.7	13.1	0.433	0.461	0.516
B	1.45	1.5	1.6	0.057	0.059	0.063
C	2.7		2.92	0.106		0.115
D	8.9		9.4	0.350		0.370
E	19		20	0.748		0.787
G	10.7	10.9	11.1	0.421	0.429	0.437
N	16.5	16.9	17.2	0.650	0.665	0.677
P	25		26	0.984		1.024
R	3.88		4.2	0.153		0.165
U	38.5		39.3	1.516		1.547
V	30	30.14	30.3	1.181	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
...