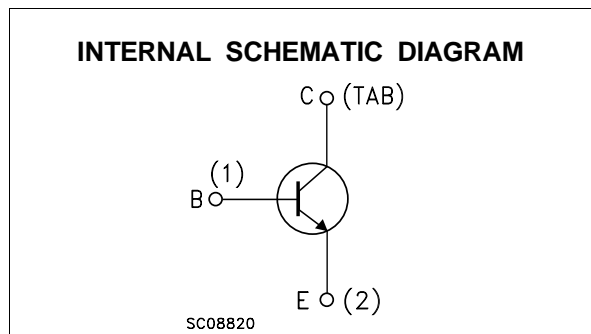
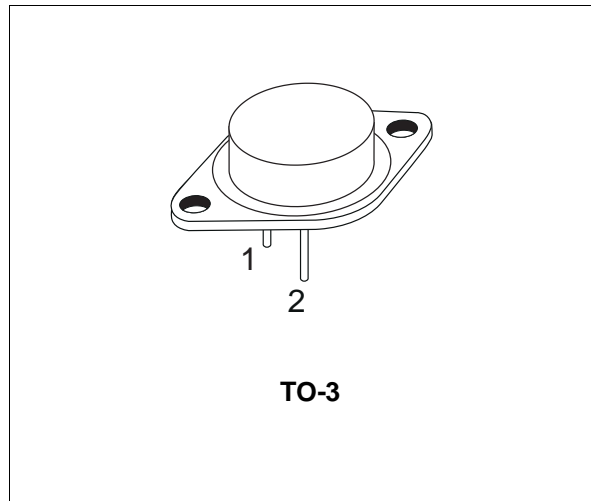


HIGH CURRENT NPN SILICON TRANSISTOR

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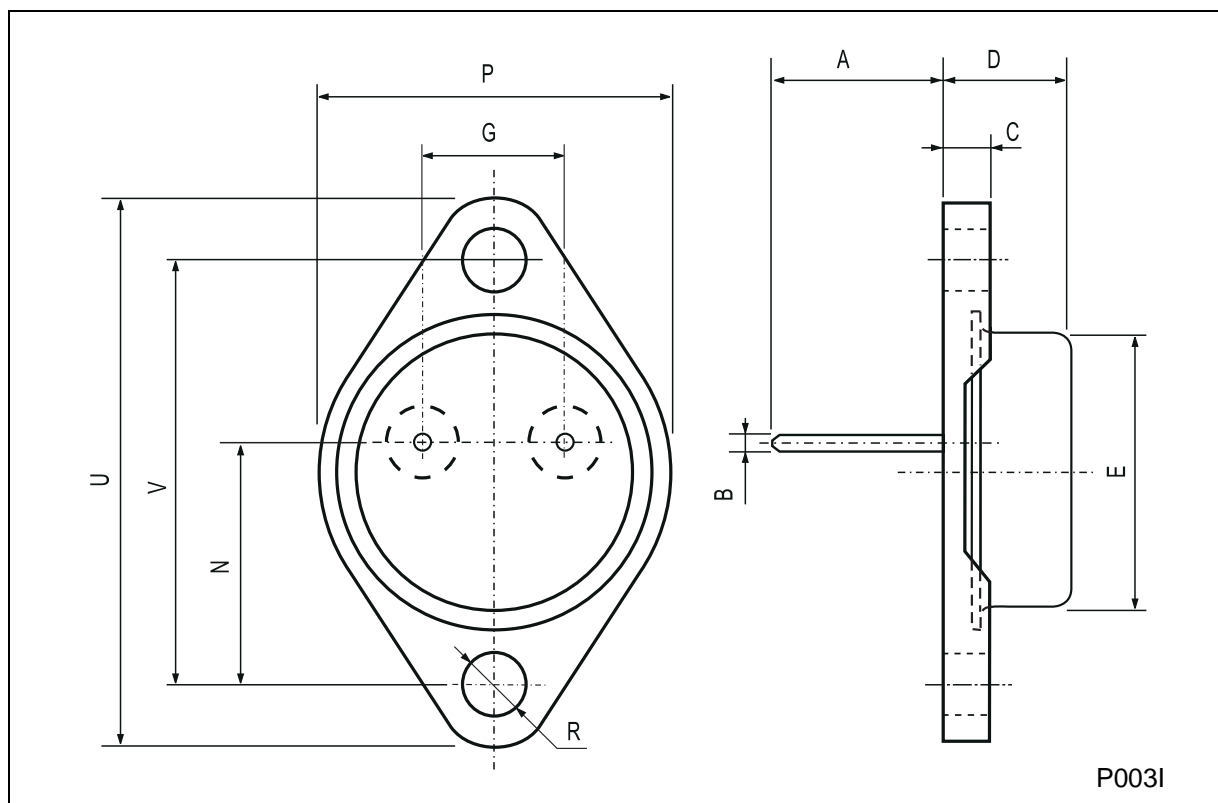
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

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	$I_C = 1 A$ $f = 1 MHz$ $V_{CE} = 5 V$	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	$I_C = 50 A$ $I_{B1} = 5 A$		0.9	2	μs
t_f	Fall Time	$I_{B2} = -5 A$ $V_{CC} = 100 V$		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



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