

HIGH CURRENT NPN SILICON TRANSISTOR

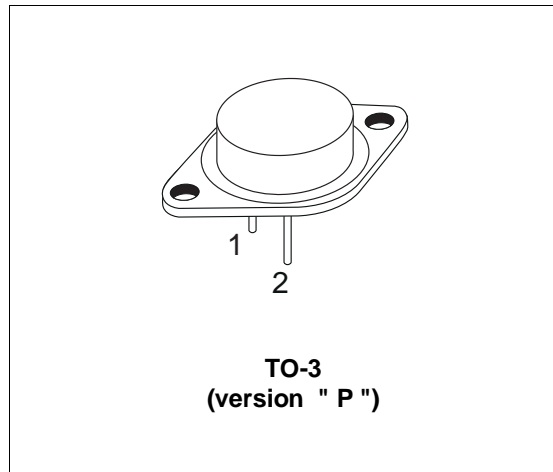
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- MAINTAINS GOOD SWITCHING PERFORMANCE EVEN WITHOUT NEGATIVE BASE DRIVE

APPLICATIONS

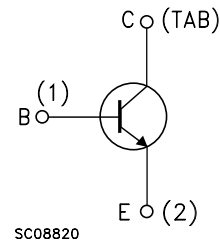
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUR52 is a silicon multi-epitaxial planar NPN transistors in modified 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 ($I_E = 0$)	350	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	250	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

BUR52

THERMAL DATA

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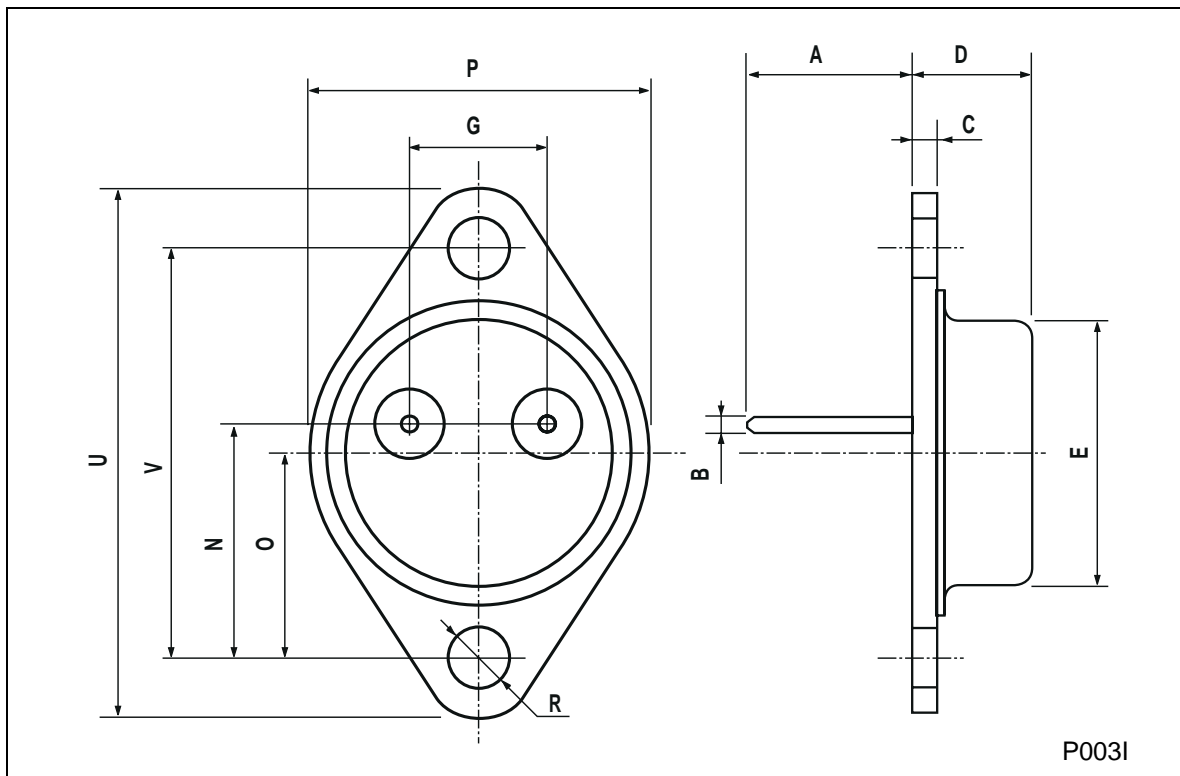
ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 350\text{ V}$ $V_{CB} = 350\text{ V}$ $T_{case} = 125\text{ °C}$			0.2 2	mA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 250\text{ V}$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 7\text{ V}$			0.2	μA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{ mA}$	250			V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	$I_E = 10\text{ mA}$	10			V
$V_{CE(sat)*}$	Collector-emitter Saturation Voltage	$I_C = 25\text{ A}$ $I_B = 2\text{ A}$ $I_C = 40\text{ A}$ $I_B = 4\text{ A}$		0.7	1 1.5	V V
$V_{BE(sat)*}$	Base-emitter Saturation Voltage	$I_C = 25\text{ A}$ $I_B = 2\text{ A}$ $I_C = 40\text{ A}$ $I_B = 4\text{ A}$		1.5	1.8 2	V V
h_{FE*}	DC Current Gain	$I_C = 5\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 40\text{ A}$ $V_{CE} = 4\text{ V}$	20 15		100	
$I_{s/b}$	Second Breakdown Collector Current	$V_{CE} = 20\text{ V}$ $t = 1\text{ s}$	17.5			A
f_T	Transition-Frequency	$I_C = 1\text{ A}$ $V_{CE} = 5\text{ V}$ $f = 1\text{ MHz}$		10	16	MHz
t_{on}	Turn-on Time	$I_C = 40\text{ A}$ $I_{B1} = 4\text{ A}$ $V_{CC} = 100\text{ V}$		0.3	1	μs
t_s	Storage Time	$I_C = 40\text{ A}$ $I_{B1} = 4\text{ A}$ $I_{B2} = -4\text{ A}$ $V_{CC} = 100\text{ V}$		1.2	2	μs
t_f	Fall Time			0.2	0.6	μs
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 250\text{ V}$ $L = 500\text{ μH}$	40			A

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

TO-3 (version P) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00	11.7	13.10	0.433		0.516
B	1.45	1.5	1.60	0.057		0.063
C	2.7		2.92	0.106		0.115
D	8.9		9.4	0.350		0.370
E	19.00		20.00	0.748		0.787
G	10.70	10.9	11.10	0.421	0.429	0.437
N	16.50	16.9	17.20	0.650	0.665	0.677
P	25.00		26.00	0.984		1.024
R	3.88		4.2	0.153		0.165
U	38.50		39.30	1.516		1.547
V	30.00	30.14	30.30	1.181	1.186	1.193



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