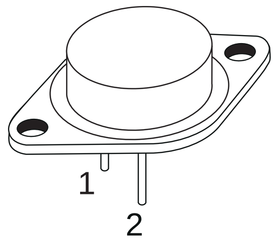
SGS-THOMSON MICROELECTRONICS

BUR52

HIGH CURRENT NPN SILICON TRANSISTOR

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



TO-3
(version " P ")

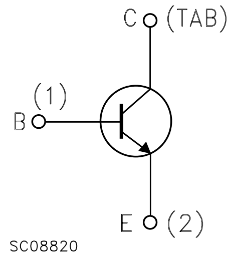
APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUR52 is a silicon multiepitaxial planar NPN transistors in modified Jedec TO-3 metal case, intented 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 $T_c \leq 25\ ^oC$	350	W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Max. Operating Junction Temperature	200	^oC

THERMAL DATA

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

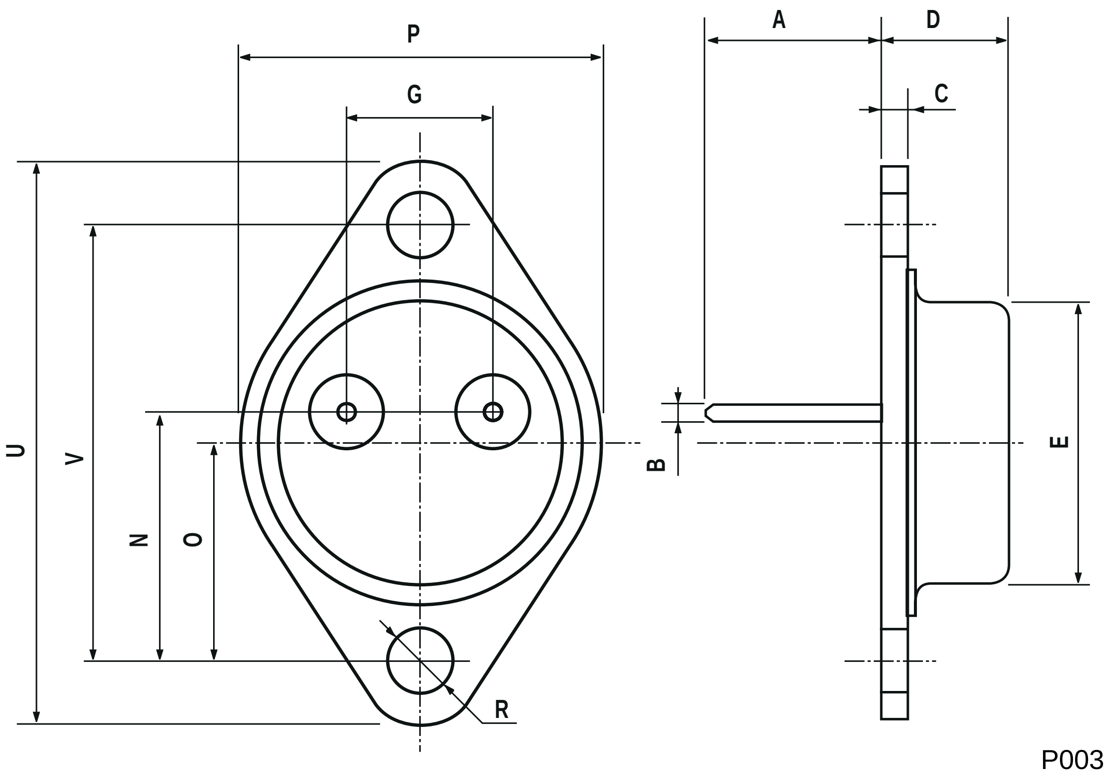
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 350 V V_{CB} = 350 V T_{case} = 125 ^oC			0.2 2	mA mA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} =250 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	250			V
V_{EBO}	Emitter-base Voltage (I_C = 0)	I_E = 10 mA	10			V
$V_{CE(sat)}$∗	Collector-emitter Saturation Voltage	I_C = 25 A I_B = 2 A I_C = 40 A I_B = 4 A		 0.7	1 1.5	V V
$V_{BE(sat)}$∗	Base-emitter Saturation Voltage	I_C = 25 A I_B = 2 A I_C = 40 A I_B = 4 A		 1.5	1.8 2	V V
h_{FE}∗	DC Current Gain	I_C = 5 A V_{CE} = 4 V I_C = 40 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	IC = 40 A I_{B1} = 4 A V_{CC} = 100 V		0.3	1	μs
t_s	Storage Time	IC = 40 A I_{B1} = 4 A I_{B2} = -4 A V_{CC} = 100 V		1.2	2	μs
t_f	Fall Time			0.2	0.6	μs
	Clamped $E_{s/b}$ Collector Current	V_{clamp} = 250 V L = 500 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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