

## HIGH CURRENT NPN SILICON TRANSISTOR

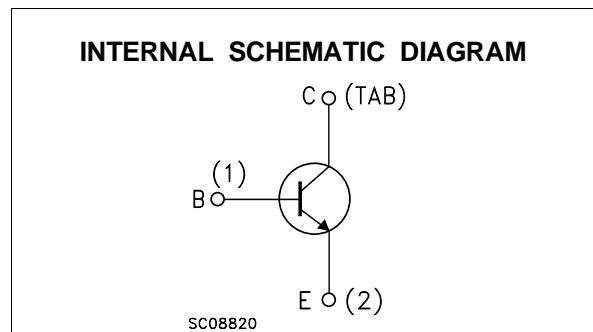
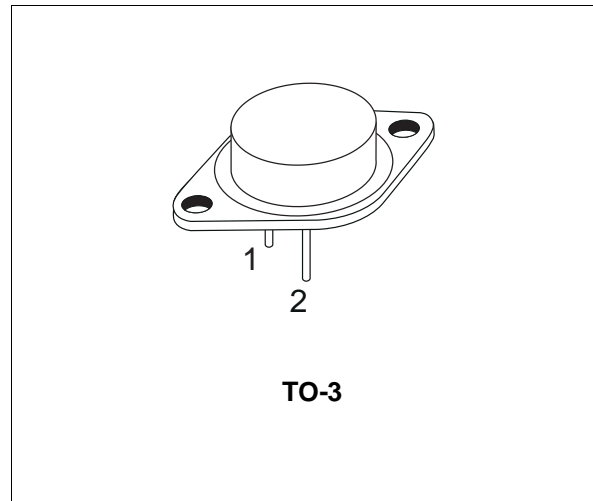
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- MAINTAINS GOOD SWITCHING PERFORMANCE EVEN WITHOUT NEGATIVE BASE DRIVE

### APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

### DESCRIPTION

The BUR52 is a silicon 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 ( $I_E = 0$ )	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

**THERMAL DATA**

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	0.5	°C/W
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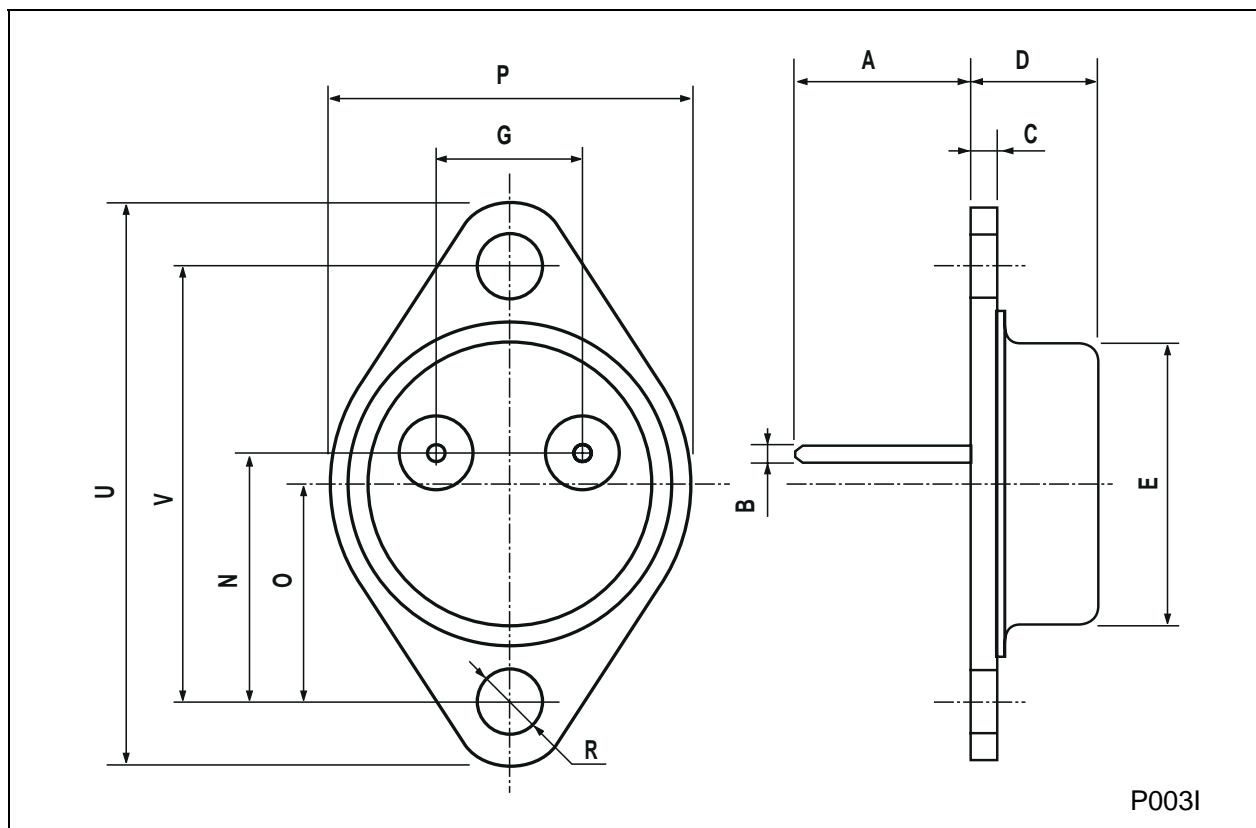
**ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CB0</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 350 V V <sub>CB</sub> = 350 V      T <sub>case</sub> = 125 °C			0.2 2	mA mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 250 V			1	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 7 V			0.2	μA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA	250			V
V <sub>EBO</sub>	Emitter-base Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 10 mA	10			V
V <sub>CE(sat)*</sub>	Collector-emitter Saturation Voltage	I <sub>C</sub> = 25 A      I <sub>B</sub> = 2 A I <sub>C</sub> = 40 A      I <sub>B</sub> = 4 A		0.7	1 1.5	V V
V <sub>BE(sat)*</sub>	Base-emitter Saturation Voltage	I <sub>C</sub> = 25 A      I <sub>B</sub> = 2 A I <sub>C</sub> = 40 A      I <sub>B</sub> = 4 A		1.5	1.8 2	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 5 A      V <sub>CE</sub> = 4 V I <sub>C</sub> = 40 A      V <sub>CE</sub> = 4 V	20 15		100	
I <sub>s/b</sub>	Second Breakdown Collector Current	V <sub>CE</sub> = 20 V      t = 1 s	17.5			A
f <sub>T</sub>	Transition-Frequency	I <sub>C</sub> = 1 A      V <sub>CE</sub> = 5 V f = 1 MHz		10	16	MHz
t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 40 A      I <sub>B1</sub> = 4 A V <sub>CC</sub> = 100 V		0.3	1	μs
t <sub>s</sub> t <sub>f</sub>	Storage Time Fall Time	I <sub>C</sub> = 40 A      I <sub>B1</sub> = 4 A I <sub>B2</sub> = -4 A      V <sub>CC</sub> = 100 V		1.2 0.2	2 0.6	μs μs
	Clamped E <sub>s/b</sub> Collector Current	V <sub>clamp</sub> = 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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