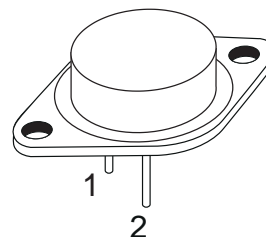


HIGH CURRENT NPN SILICON TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR

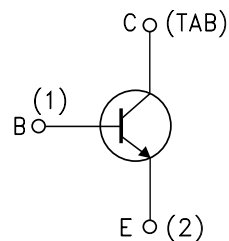
DESCRIPTION

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.



TO-3

INTERNAL SCHEMATIC DIAGRAM



SC08820

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

THERMAL DATA

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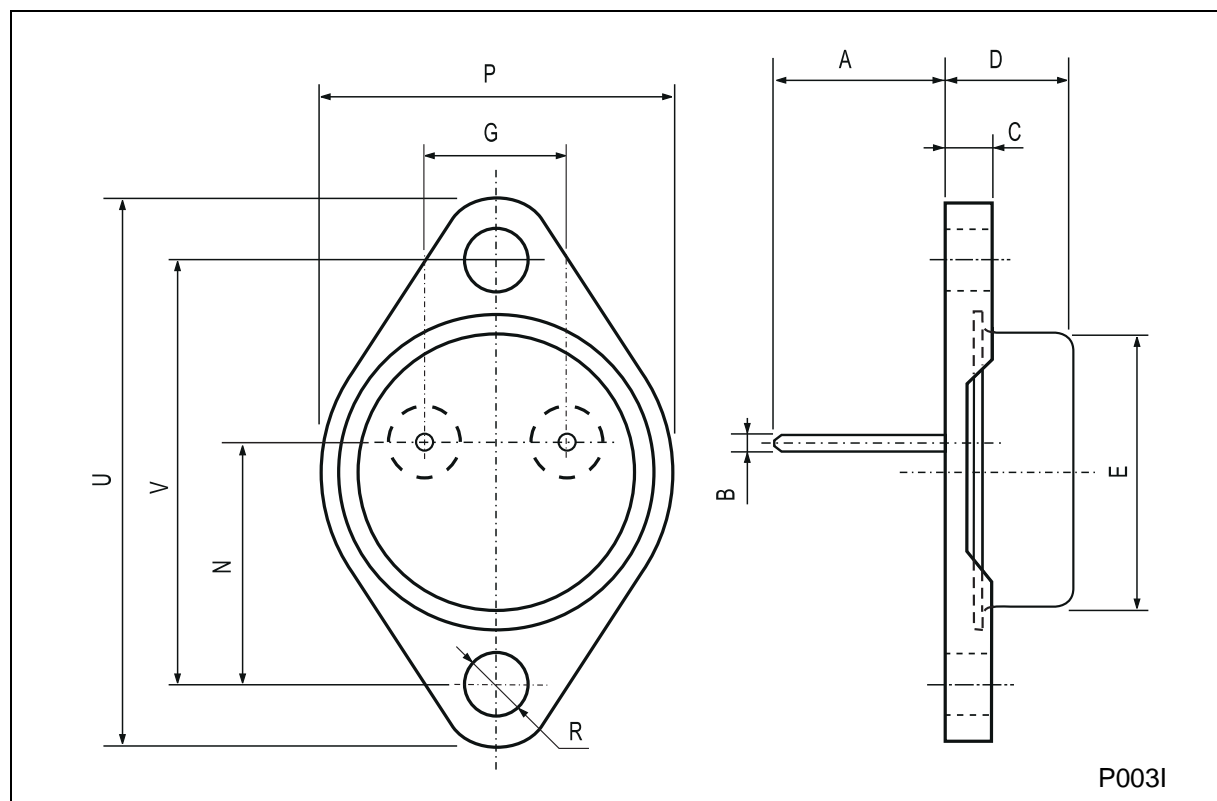
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 _c = 125 °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 _B = 0)	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 t _f	Storage Time Fall Time	I _C = 50 A I _{B1} = 5 A I _{B2} = -5 A V _{CC} = 100 V		0.9 0.24	2 0.6	μs μs
	Clamped E _{s/b} Collector Current	V _{clamp} = 200 V L = 500 μH	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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