

HIGH CURRENT NPN SILICON TRANSISTOR

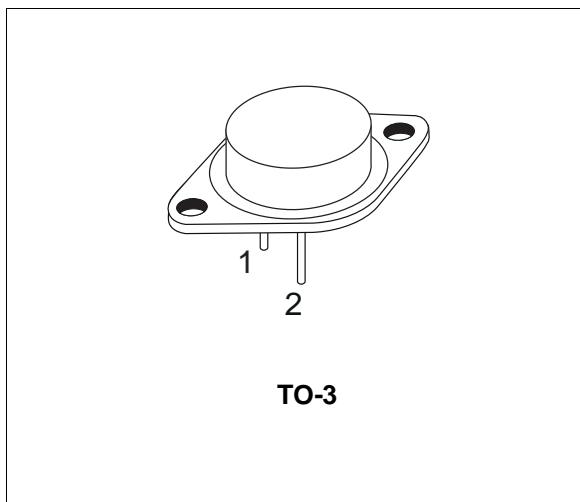
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

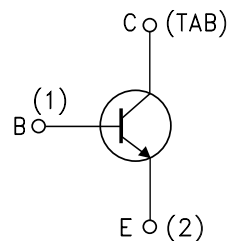
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUR50S is a silicon multiepitaxial planar NPN transistors in 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 ($I_E = 0$)	200	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	125	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	70	A
I_{CM}	Collector Peak Current ($t_p = 10$ ms)	100	A
I_B	Base Current	20	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

BUR50S

THERMAL DATA

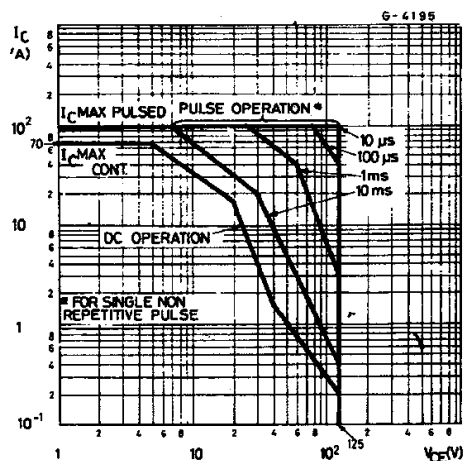
R _{thj-case}	Thermal Resistance Junction-case	Max	0.5	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 200 V V _{CB} = 200 V T _{case} = 125 °C			0.2 2	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 125 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	125			V
V _{EBO}	Emitter-base Voltage (I _C = 0)	I _E = 10 mA	10			V
V _{CE(sat)*}	Collector-emitter Saturation Voltage	I _C = 35 A I _C = 70 A		0.8	1 1.5	V V
V _{BE(sat)*}	Base-emitter Saturation Voltage	I _C = 35 A I _C = 70 A		1.6	1.8 2	V V
h _{FE} *	DC Current Gain	I _C = 5 A I _C = 50 A	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 = 70 A I _{B1} = 7 A V _{CC} = 60 V		0.5	1.2	μs
t _s	Storage Time	I _C = 70 A I _{B1} = 7 A		0.82	2	μs
t _f	Fall Time	I _{B2} = -7 A V _{CC} = 60 V		0.1	0.5	μs
	Clamped E _{s/b} Collector Current	V _{clamp} = 125 V L = 500 μH	70			A

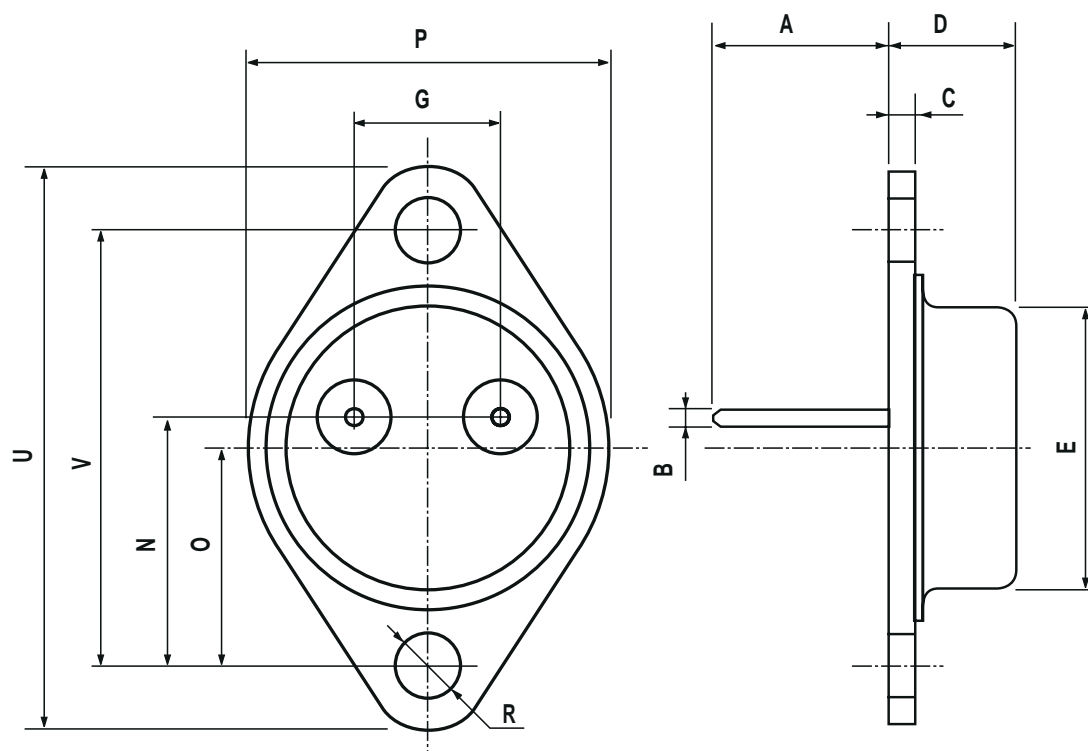
* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

Safe Operating Area



TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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