

HIGH CURRENT NPN SILICON TRANSISTOR

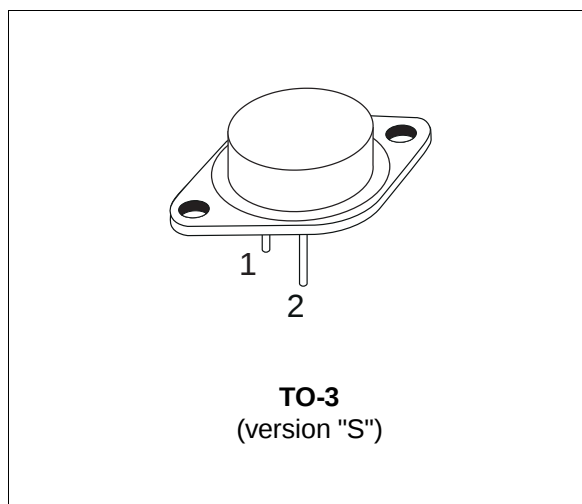
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED
- HIGH RUGGEDNESS

APPLICATIONS

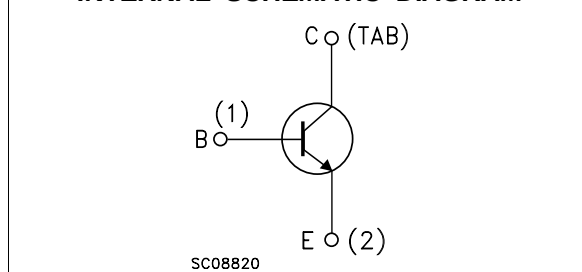
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- SWITCHING REGULATORS

DESCRIPTION

The BUV20 is silicon Multiepitaxial Planar NPN transistor mounted in jedec TO-3 metal case. It is 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 ($I_E = 0$)	160	V
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 100\Omega$)	150	V
V_{CEX}	Collector-Emitter Voltage ($V_{BE} = -1.5V$)	160	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	125	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	50	A
I_{CM}	Collector Peak Current	60	A
I_B	Base Current	10	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	250	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ C$
T_j	Junction Temperature	200	$^\circ C$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.7	°C/W
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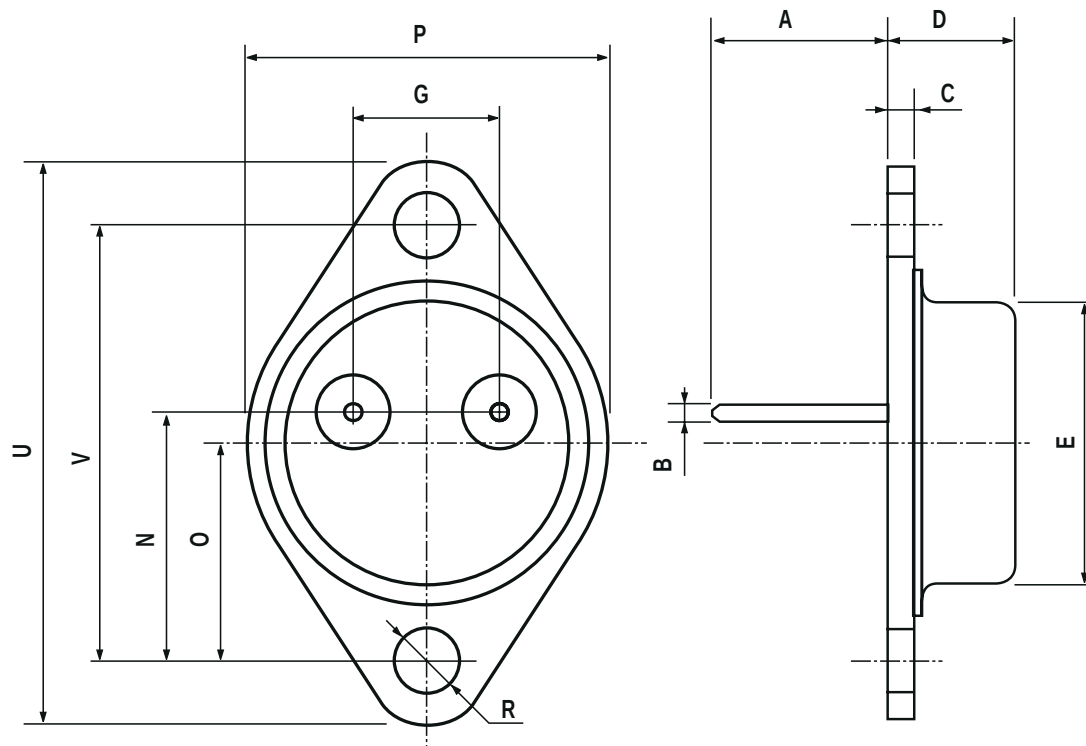
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 160 V V _{CE} = 160 V T _{case} = 125 °C			3 12	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 100 V			3	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 200 mA L = 25 mH	125			V
V _{(BR)EB0*}	Emitter-base Breakdown Voltage (I _C = 0)	I _E = 50 mA	7			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 25 A I _B = 2.5 A I _C = 50 A I _B = 5 A		0.3 0.7	0.6 1.2	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 50 A I _B = 5 A		1.4	2	V
h _{FE*}	DC Current Gain	V _{CE} = 2 V I _C = 25 A V _{CE} = 4 V I _C = 50 A	20 10		60	
f _T	Transition frequency	V _{CE} = 15 V I _C = 2 A f = 100 MHz	8			MHz
t _{on} t _f t _s	RESISTIVE LOAD Turn-on Time Fall Time Storage Time	I _C = 50 A I _{B1} = -I _{B2} = 5 A			1.5 0.3 1.2	μs μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %.

TO-3 (version S) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	1.47		1.60	0.058		0.063
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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