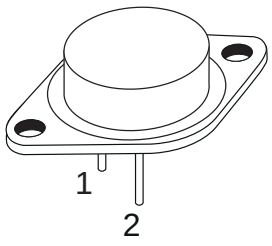
BUV20

HIGH CURRENT NPN SILICON TRANSISTOR

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

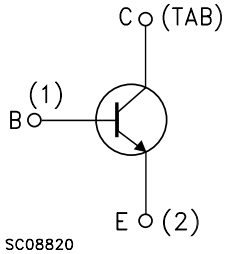
APPLICATIONS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT
- SWITCHING REGULATORS

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.



TO-3
(version "S")

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} = 100Ω)	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 $T_{case} \leq 25\ ^oC$	250	W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Junction Temperature	200	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case Max	0.7	$^oC/W$

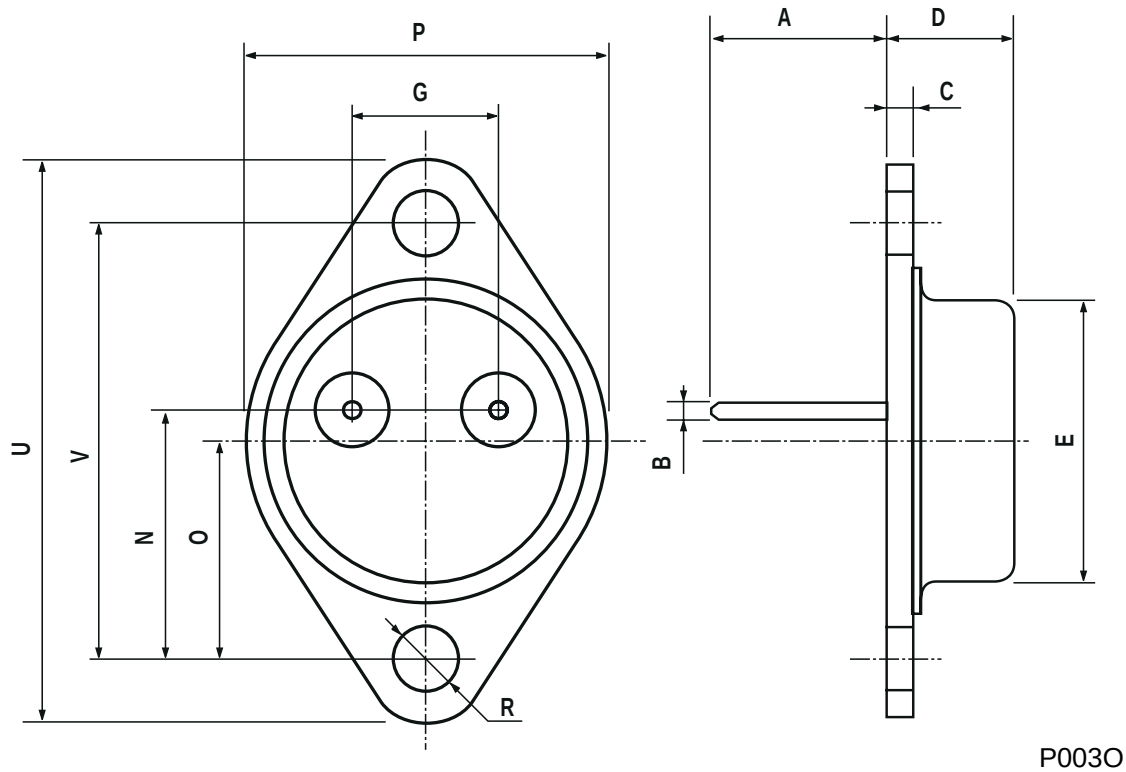
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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 ^oC			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
	RESISTIVE LOAD					
t_{on}	Turn-on Time	I_C = 50 A I_{B1} = -I_{B2} = 5 A			1.5	µs
t_f	Fall Time				0.3	µs
t_s	Storage Time				1.2	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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