



## NPN BUX20

### HIGH CURRENT, HIGH SPEED, HIGH POWER TRANSISTOR

The BUX20 is silicon multiepitaxial planar NPN transistors in Jedec TO-3. They are intended for use in switching and linear applications in military and industrial equipment. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	125	V
$V_{CBO}$	Collector-Base Voltage	$I_E = 0$	160	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	7.0	V
$V_{CEX}$	Collector-Emitter Voltage	$V_{BE} = -1.5V$	160	V
$I_C$	Collector Current		50	A
$I_{CM}$	Collector Peak Current	$t_p = 10ms$	60	A
$I_B$	Base Current		10	A
$P_t$	Total Power Dissipation	@ $T_C = 25^\circ$	350	W
$T_J$	Junction Temperature		200	$^\circ C$
$T_{Stg}$	Storage Temperature		-65 to +200	$^\circ C$

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	0.5	$^\circ C/W$

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

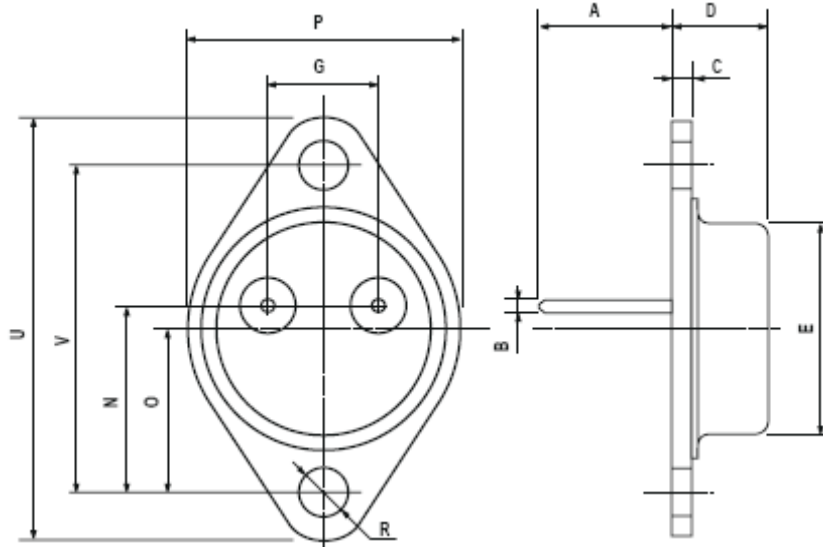
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C = 200 \text{ mA}$	125	-	-	V
$V_{EBO(SUS)}$	Emitter-Base Breakdown Voltage (*)	$I_C = 0 \text{ A}, I_E = 50 \text{ mA}$	7	-	-	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = 100 \text{ V}, I_B = 0 \text{ A}$	-	-	3	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE} = 160 \text{ V}, V_{BE} = -1.5 \text{ V}$	-	-	3	mA
		$V_{CE} = 160 \text{ V}, V_{BE} = -1.5 \text{ V}$ $T_{case} = 125^\circ\text{C}$	-	-	12	
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5.0 \text{ V}, I_C = 0$	-	-	1	mA
$h_{FE}$	DC Current Gain (*)	$I_C = 25 \text{ A}, V_{CE} = 2.0 \text{ V}$	20	-	60	-
		$I_C = 50 \text{ A}, V_{CE} = 4.0 \text{ V}$	10	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 25 \text{ A}, I_B = 2.5 \text{ A}$	-	0.7	0.6	V
		$I_C = 50 \text{ A}, I_B = 5 \text{ A}$	-	-	1.2	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C = 50 \text{ A}, I_B = 5 \text{ A}$	-	-	2	
$I_{S/B}$	Second breakdown collector current	$V_{CE} = 40 \text{ V}, t_s = 1 \text{ s}$	1.5	-	-	A
		$V_{CE} = 20 \text{ V}, t_s = 1 \text{ s}$	17.5	-	-	
$f_T$	Transition frequency	$V_{CE} = 15 \text{ V}, I_C = 2 \text{ A}$ $f = 10 \text{ MHz}$	8	-	-	MHz
$t_{on}$	Turn-on time	$I_C = 50 \text{ A}, I_B = 5 \text{ A}$ $V_{CC} = 60 \text{ V}$	-	-	1.5	$\mu\text{s}$
$t_s$	Storage time	$I_C = 50 \text{ A}, V_{CC} = 60 \text{ V}$	-	-	1.2	
$t_f$	Fall time	$I_{B1} = -I_{B2} = 5 \text{ A}$	-	-	0.3	

(\*) Pulse Duration = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

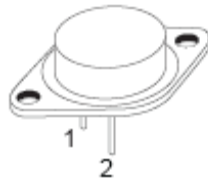
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### MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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