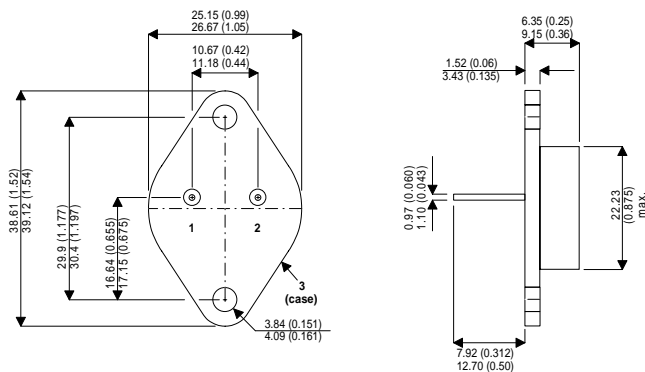


HIGH CURRENT HIGH SPEED HIGH POWER TRANSISTOR

MECHANICAL DATA

Dimensions in mm(inches)



TO-3 PACKAGE (TO-204AA)

PIN 1 — Base PIN 2 — Emitter Case is Collector.

DESCRIPTION

The BUX20 is a silicon multi-epitaxial planar NPN transistor in modified Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	160V
V_{CEX}	Collector – Emitter Voltage ($V_{BE} = -1.5V$)	160V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	125V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	7V
I_C	Collector Current	50A
I_{CM}	Collector Peak Current ($t_p = 10$ ms)	60A
I_B	Base Current	10A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	350W
T_{stg}	Storage Temperature	-65 to $200^{\circ}C$
T_J	Junction Temperature	$200^{\circ}C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _{CEO(sus)} *	Collector - Emitter Sustaining Voltage I _C = 200mA	125			V
V _{EBO}	Emitter – Base Voltage I _E = 50mA I _C = 0	7			V
I _{CEO}	Collector Cut-off Current V _{CE} = 100V I _B = 0			3	mA
I _{CEX}	Collector Cut-off Current V _{CE} = 160V V _{BE} = -1.5V T _C = 125°C			3 12	mA
I _{EBO}	Emitter Cut-off Current I _C = 0 V _{EB} = 5V			1	mA
V _{CE(sat)} *	Collector – Emitter Saturation Voltage I _C = 25A I _B = 2.5A I _C = 50A I _B = 5A		0.3 0.55	0.6 1.2	V
V _{BE(sat)} *	Base – Emitter Saturation Voltage I _C = 50A I _B = 5A		1.35	2	V
h _{FE} *	DC Current Gain I _C = 25A V _{CE} = 2V I _C = 50A V _{CE} = 4V	20 10		60	—
I _{S/b}	Second Breakdown Collector Current V _{CE} = 40V t = 1s V _{CE} = 20V t = 1s	0.15 17.5			A
f _T	Transition Frequency I _C = 2A V _{CE} = 15V f = 10MHz	8			MHz
t _{on}	Turn-On Time I _C = 50A I _{B1} = 5A V _{CC} = 60V		0.4	1.5	μs
t _s	Storage Time I _C = 50A I _{B1} = 5A		0.85	1.2	
t _f	Fall Time I _{B2} = -5A V _{CC} = 60V		0.1	0.3	

* Pulsed: pulse duration = 300ms, duty cycle ≤ 2%

THERMAL CHARACTERISTICS

R _{θJC}	Thermal Resistance Junction to Case		0.5		°C/W
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