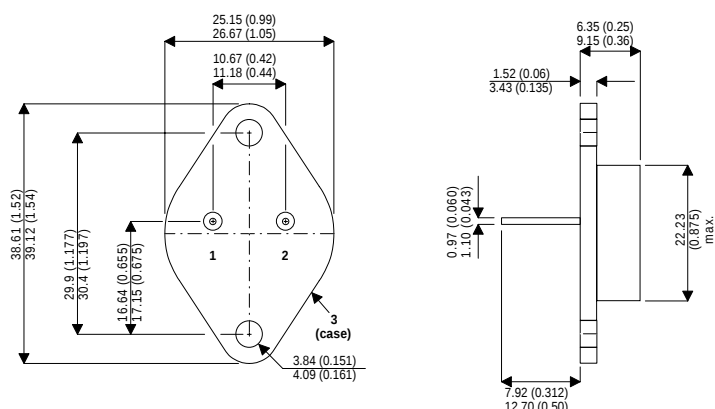


MECHANICAL DATA

Dimensions in mm (inches)



HIGH CURRENT HIGH SPEED HIGH POWER SILICON NPN PLANAR TRANSISTOR

Applications

The BUX81 is an epitaxial silicon NPN planar transistor that has high current and high power handling capability and high switching speed.

This device is especially suitable for switching-control amplifiers, power gates, switching regulators, power-switching circuits converters, inverters and control circuits. Other recommended applications include DC-RF amplifiers and power oscillators.

TO-204AA (TO-3)

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

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

V_{CESM}	Collector – Emitter Voltage	$V_{BE} = 0$	1000V
V_{CER}	Collector – Emitter Voltage	$R_{BE} = 100\Omega$	500V
V_{CEO}	Collector – Emitter Voltage(open base)		450V
I_C	Collector Current (d.c)		10A
I_{CM}	Peak Collector Current	$t_p = 2\text{ms}$	15A
I_B	Base Current (d.c)		4A
P_{tot}	Total Power Dissipation $T_{mb} = 50^\circ\text{C}$		150W
T_{STG}	Storage Temperature Range		-65 to $+200^\circ\text{C}$
T_j	Maximum Junction Temperature		$+200^\circ\text{C}$

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 ($T_j = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CEO}$ Collector - Emitter Breakdown Voltage	$I_C = 100\text{mA}$ $I_B = 0$	450			V
$V_{(BR)CER}$ Collector - Emitter Breakdown Voltage	$I_C = 100\text{mA}$ $R_{BE} = 50\Omega$ $I_B = 0$	500			V
$V_{CE(sat)^*}$ Collector – Emitter Saturation Voltage	$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			1.5	V
	$I_C = 8\text{A}$ $I_B = 2.5\text{A}$			3.0	
$V_{BE(sat)^*}$ Base – Emitter Saturation Voltage	$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			1.4	
	$I_C = 8\text{A}$ $I_B = 2.5\text{A}$			1.8	
I_{CES} Collector Cut-off Current	$V_{CE} = 1000\text{V}$ $V_{BE} = 0$ $T_C = +125^\circ\text{C}$			1	mA
				3	
I_{EBO} Emitter Cut-off Current	$I_C = 0$ $V_{EB} = 10\text{V}$			10	mA
f_T Transition Frequency	$I_C = 0.5\text{A}$ $V_{CE} = 10\text{V}$		8		MHz
C_{obo} Output Capacitance $f=100\text{kHz}$	$I_E = 0$ $V_{CB} = 20\text{V}$		105		pF
t_{on} Turn-On Time	$I_C = 5\text{A}$ $V_{CC} = 250\text{V}$ $I_{B1} = 1\text{A}$ $I_{B2} = -2\text{A}$			0.5	μs
t_s Storage Time				3.5	
t_f Fall Time				0.8	

THERMAL CHARACTERISTICS

$R_{th\ j-mb}$ Thermal Resistance Junction to Case			1.65	$^\circ\text{C/W}$
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