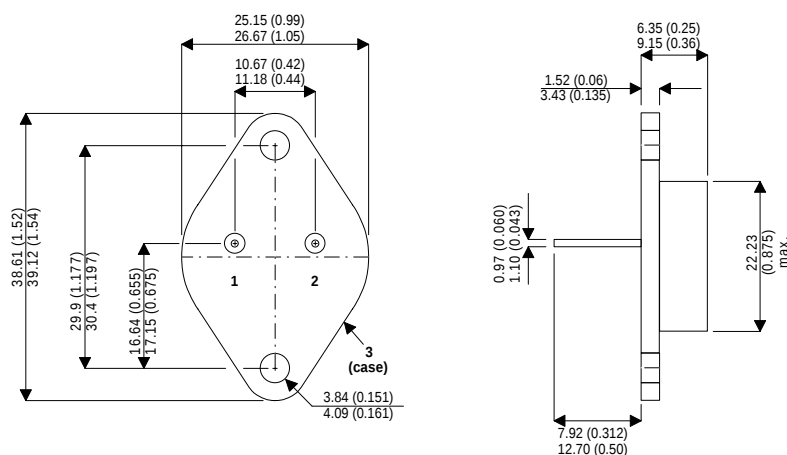


MECHANICAL DATA

Dimensions in mm



NPN SILICON POWER TRANSISTOR

FEATURES

- Fast Turn-Off Time
- Hermetic Package

Applications

The BUX47 transistor is designed for high voltage, high speed, power switching in inductive circuits where fall time is critical. It is particularly well suited for line operated switch mode applications.

TO-204AA (TO-3)

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

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

V_{CER}	Collector – Base Voltage	($R_{BE} = 10\Omega$)	850V
V_{CES}	Collector – Emitter Sustaining Voltage	($V_{BE} = 0$)	850V
V_{CEO}	Collector – Emitter Voltage	($I_B = 0$)	400V
V_{EBO}	Emitter – Base Voltage	($I_C = 0$)	7V
I_C	Collector Current		9A
I_{CM}	Peak Collector Current	$t_p = <5ms$	15A
I_B	Base Current		8A
P_{tot}	Total Power Dissipation		125W
	Derate above $25^{\circ}C$		$0.83^{\circ}C / W$
T_{STG}	Storage Temperature Range		-65 to $+175^{\circ}C$
T_J	Maximum Junction Temperature		$+175^{\circ}C$

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.

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Issue 1

ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}^*$ Collector - Emitter Sustaining Voltage	$I_{\text{C}} = 0.2\text{A}$ $I_{\text{B}} = 0$ $L = 25\text{mH}$	400			V
V_{EBO} Emitter – Base Voltage	$I_{\text{C}} = 0$ $I_{\text{E}} = 50\text{mA}$	7		30	
I_{CER} Collector Cut-off Current	$V_{\text{CE}} = 850\text{V}$ $R_{\text{BE}} = 10\Omega$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.4	mA
I_{CEV} Collector Cut-off Current	$V_{\text{CE}} = 850\text{V}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.15	
I_{EBO} Emitter Cut-off Current	$I_{\text{C}} = 0$ $V_{\text{BE}} = -5\text{V}$			1.0	
$V_{\text{CE(sat)}}^*$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 1.2\text{A}$ $I_{\text{C}} = 9\text{A}$ $I_{\text{B}} = 3\text{A}$			1.5	V
$V_{\text{BE(sat)}}^*$ Base–Emitter Saturation Voltage	$I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 1.2\text{A}$			1.6	
t_{on} Turn–On Time	$I_{\text{C}} = 6\text{A}$ $V_{\text{CC}} = 150\text{V}$			0.8	μs
t_{s} Storage Time	$I_{\text{B1}} = -I_{\text{B2}} = 1.2\text{A}$			2.5	
t_{f} Fall Time				0.8	

THERMAL CHARACTERISTICS

$R_{\theta\text{JC}}$ Thermal Resistance Junction to Case			1.2	$^{\circ}\text{C/W}$
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*Pulsed : Pulse duration = 300 μs , duty cycle = 1.5%