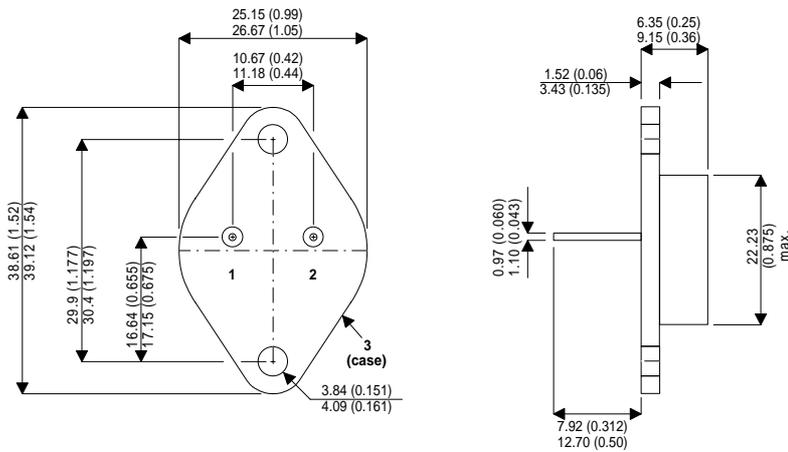


**MECHANICAL DATA**

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°C		0.83°C / W
$T_{STG}$	Storage Temperature Range		-65 to +175°C
$T_J$	Maximum Junction Temperature		+175°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** ( $T_{\text{case}} = 25^{\circ}\text{C}$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}^*$ Collector - Emitter Sustaining Voltage	$I_{\text{C}} = 0.2\text{A}$ $L = 25\text{mH}$ $I_{\text{B}} = 0$	400			V
$V_{\text{EBO}}$ Emitter – Base Voltage	$I_{\text{C}} = 0$ $I_{\text{E}} = 50\text{mA}$	7		30	
$I_{\text{CER}}$ Collector Cut-off Current	$V_{\text{CE}} = 850\text{V}$ $R_{\text{BE}} = 10\Omega$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.4 3	mA
$I_{\text{CEV}}$ Collector Cut-off Current	$V_{\text{CE}} = 850\text{V}$ $V_{\text{BE}} = -2.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.15 1.5	
$I_{\text{EBO}}$ Emitter Cut-off Current	$I_{\text{C}} = 0$ $V_{\text{BE}} = -5\text{V}$			1.0	
$V_{\text{CE(sat)}}^*$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 1.2\text{A}$			1.5	V
	$I_{\text{C}} = 9\text{A}$ $I_{\text{B}} = 3\text{A}$			3.0	
$V_{\text{BE(sat)}}^*$ Base–Emitter Saturation Voltage	$I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 1.2\text{A}$			1.6	
$t_{\text{on}}$ Turn–On Time	$I_{\text{C}} = 6\text{A}$ $V_{\text{CC}} = 150\text{V}$			0.8	$\mu\text{s}$
$t_{\text{s}}$ Storage Time	$I_{\text{B1}} = -I_{\text{B2}} = 1.2\text{A}$			2.5	
$t_{\text{f}}$ 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  $\mu\text{s}$  , duty cycle = 1.5%