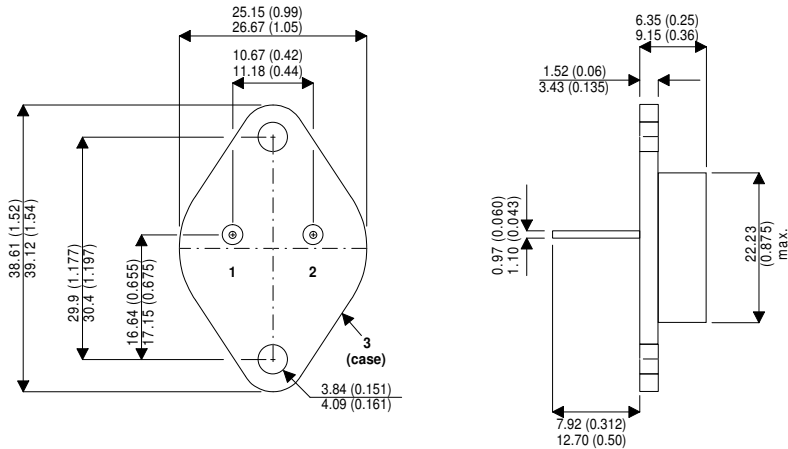


## MECHANICAL DATA

Dimensions in mm (inches)



### TO3 (TO204AA)

Pin 1 = Base      Pin 2 = Emitter      Case = Collector

**Bipolar NPN Device in a  
Hermetically Sealed TO3  
Metal Package**

## FEATURES

- Low  $V_{CE(sat)}$
- Fast Switching
- Low On-State Voltage Drop

## APPLICATIONS

Power Switching Circuits.

## ABSOLUTE MAXIMUM RATINGS

$T_{CASE} = 25^{\circ}\text{C}$  unless otherwise stated

$V_{CEX}$	Collector - Emitter Voltage ( $V_{BE} = -1.5\text{V}$ )	350V
$V_{CEO}$	Collector - Emitter Voltage	250V
$V_{EBO}$	Emitter - Base Voltage	7V
$I_C$	Continuous Collector Current	12A
$I_B$	Base Current	2.5A
$P_{tot}$	Total Power Dissipation at $T_{case} = 25^{\circ}\text{C}$	120W
$T_{stg}$	Storage Temperature	-65 to $200^{\circ}\text{C}$

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.

## THERMAL CHARACTERISTICS

		Max.	Unit
$R_{th\ j-case}$	Thermal resistance to case	1.46	°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CER}$ Collector Cutoff Current	$V_{CE} = 400V$ $R_{BE} = 10\Omega$ $T_j = 100^{\circ}C$			0.5 2.5	mA
$I_{CEV}$ Collector Cut-Off Current	$V_{CE} = 400V$ $V_{BE} = -1.5V$ $T_j = 100^{\circ}C$			0.5 2	
$I_{EBO}$ Emitter Cut-Off Current	$V_{EB} = 5V$ $I_C = 0$			1	
$V_{(BR)CEO}^*$ Collector to Emitter Breakdown Voltage	$I_C = 0.2A$ $L = 25mH$	250			V
$V_{(BR)EBO}$ Emitter to Base Breakdown Voltage	$I_E = 50mA$ $I_C = 0$	7			
$V_{CE(sat)}^*$ Collector to Emitter Saturation Voltage	$I_C = 4A$ $I_B = 0.4A$ $T_j = 100^{\circ}C$			0.9 1.2	
$V_{BE(sat)}^*$ Base to Emitter Saturation Voltage	$I_C = 4A$ $I_B = 0.4A$ $T_j = 100^{\circ}C$			1.3 1.3	

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

$C_{obo}$ Output Capacitance	$I_E = 0A$ $V_{CB} = 10V$ $f = 1.0MHz$			170	pF
$t_r$ Rise Time	$V_{CC} = 200V$ $I_C = 6A$ $I_{B1} = -I_{B2} = 0.75A$			0.4	$\mu s$
$t_s$ Storage Time				1.6	
$t_f$ Fall Time				0.3	

\* Pulse test  $t_p = 300\mu s$ ,  $\delta < 2\%$

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