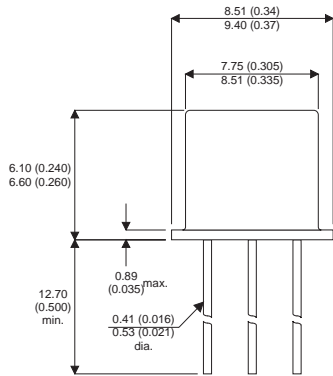


**MECHANICAL DATA**

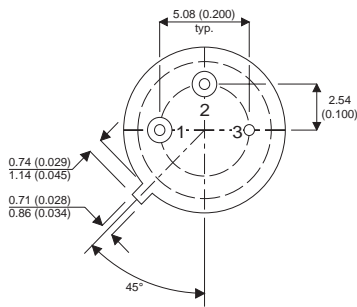
Dimensions in mm(inches)

**NPN SILICON TRANSISTOR**



**FEATURES**

- FAST SWITCHING
- HIGH PULSE POWER



**APPLICATIONS**

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

**TO39 (TO-205AD)**

Pin 1 = Emitter    Pin 2 = Base    Pin 3 = Collector

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

$V_{CBO}$	Collector – Base Voltage	450V
$V_{CEX}$	Collector – Emitter Voltage ( $V_{BE} = -1.5V$ )	450V
$V_{CEO}$	Collector – Emitter Voltage	400V
$V_{EBO}$	Emitter – Base Voltage	7V
$I_C$	Collector Current	2A
$I_{CM}$	Peak Collector Current ( $t_p = 10$ ms)	5A
$I_B$	Base Current	0.375A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	10W
$T_j, T_{stg}$	Maximum Junction And Storage Temperature Range	-65°C to +200°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	$I_{\text{C}} = 200\text{mA}$ $L = 25\text{mH}$ $I_{\text{B}} = 0\text{A}$	400			V
$I_{\text{CEX}}$ Collector Emitter Cut-off Current	$V_{\text{CE}} = 450\text{V}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.1 0.5	mA
$V_{\text{CE(sat)}}$ Collector - Emitter Saturation Voltage	$I_{\text{C}} = 0.6\text{A}$ $I_{\text{B}} = 0.06\text{A}$			0.5	V
	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}} = 0.15\text{A}$			1.3	
$V_{\text{BE(sat)}}$ Base - Emitter Saturation Voltage	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}} = 0.15\text{A}$			1.5	V
$f_{\text{t}}$ Transition Frequency	$V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 0.2\text{A}$ $f = 5\text{MHz}$	8			MHz
$t_{\text{d} + \text{tr}}$ Turn-On Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}} = 0.15\text{A}$			0.25	$\mu\text{s}$
$t_{\text{f}}$ Fall Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}2} = 0.15\text{A}$ $I_{\text{B}1} = 0.15\text{A}$			1.2	
$t_{\text{s}}$ Carrier Storage Time	$I_{\text{C}} = 1.2\text{A}$ $I_{\text{B}2} = 0.15\text{A}$ $I_{\text{B}1} = 0.15\text{A}$			3.5	

\*Pulsed  $t_{\text{p}} = 300\mu\text{s}$  @ < 1%

**THERMAL CHARACTERISTICS**

$R_{\theta\text{JC}}$ Junction to Case Thermal Resistance			17.5	$^{\circ}\text{C/W}$
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