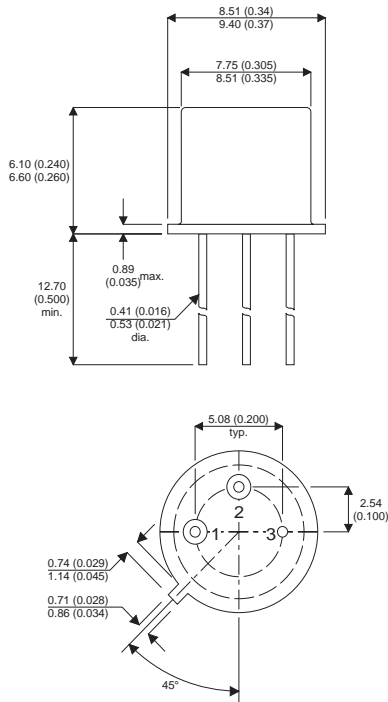


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO39 PACKAGE (TO-205AD)**

**Underside View**

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

**MEDIUM POWER SILICON  
NPN PLANAR TRANSISTOR**

**FEATURES**

- $V_{CEO} = 40V$
- $I_C = 0.7A$
- $P_{tot} = 5W$

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

$V_{CBO}$	Collector – Base Voltage	60V
$V_{CEO}$	Collector – Emitter Voltage	40V
$V_{CER}$	Collector – Emitter Sustaining Voltage	50V
$V_{CEX}$	Collector - Emitter Voltage	60V
$V_{EBO}$	Emitter-Base Voltage	5V
$I_C$	Collector Current	0.7A
$P_{TOT}$	Power Dissipation $T_{amb} = 25^{\circ}C$	1W
	$T_{case} = 25^{\circ}C$	5W
$T_j$	Junction Temperature	200°C
$T_{stg}$	Storage Temperature	-65 to 200°C
$R_{th(jc)}$	Thermal Resistance Junction to Case	35°C / W
$R_{th(ja)}$	Thermal Resistance Junction to Ambient	175°C / W

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 Voltage	$I_{\text{C}} = 100\mu\text{A}$ $I_{\text{B}} = 0$	40			V
$V_{\text{CER(SUS)*}}$ Collector – Emitter Voltage	$R_{\text{BE}} = 10\Omega$ $I_{\text{C}} = 10\text{mA}$	50			
$V_{\text{(BR)CBO*}}$ Collector – Base Breakdown Voltage	$I_{\text{C}} = 0.1\text{mA}$ $I_{\text{E}} = 0$	60			
$V_{\text{(BR)EBO*}}$ Emitter – Base Breakdown Voltage	$I_{\text{E}} = 0.1\text{mA}$ $I_{\text{C}} = 0$	5			
$I_{\text{CBO}}$ Collector – Base Cut-off Current	$V_{\text{CB}} = 30\text{V}$ $I_{\text{E}} = 0$			0.25	$\mu\text{A}$
$I_{\text{EBO}}$ Emitter - Base Cut-off Current	$V_{\text{EB}} = 4\text{V}$ $I_{\text{C}} = 0$			0.25	
$V_{\text{CE(sat)*}}$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 0.15\text{A}$ $I_{\text{B}} = 0.015\text{A}$			1.4	V
$V_{\text{BE(sat)*}}$ Base – Emitter Saturation Voltage	$I_{\text{C}} = 0.15\text{A}$ $I_{\text{B}} = 0.015\text{A}$			1.7	
$h_{21\text{E}*}$ Static Forward Current Transfer ratio	$I_{\text{C}} = 0.15\text{A}$ $V_{\text{CE}} = 10\text{V}$	50		250	—
$f_{\text{T}}$ Transistion Frequency	$V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 0.05\text{A}$ $f = 20\text{MHz}$	100			MHz
$C_{22\text{b}}$ Output Capacitance	$V_{\text{CB}} = 10\text{V}$ $f = 1\text{MHz}$			15	$\text{pF}$
$C_{11\text{b}}$ Input Capacitance	$V_{\text{EB}} = 10\text{V}$ $f = 1\text{MHz}$			80	

\* Pulsed  $t_{\text{p}} = 300\mu\text{S}$   $\delta \leq 2\%$