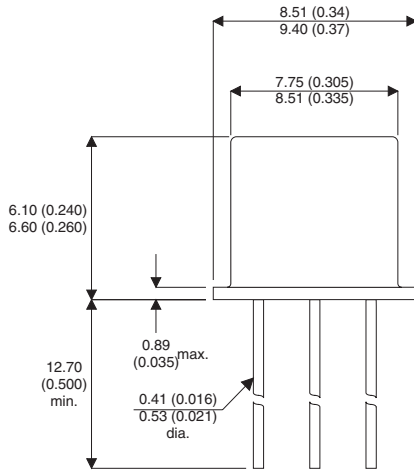


MECHANICAL DATA

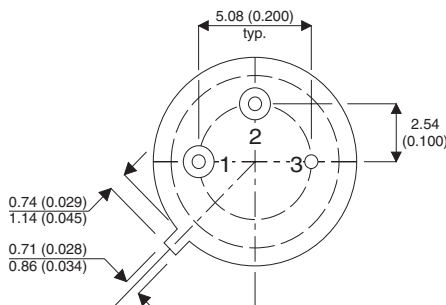
Dimensions in mm (inches)



SILICON NPN TRANSISTOR

APPLICATIONS

- Switching Speed
- Low Collector Emitter Saturation
- General Purpose Switching



**Underside View
TO-39 PACKAGE (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 ($I_E = 0$)	250V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	200V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	6V
I_C	Collector Current	3A
I_{CM}	Peak Collector Current	5A
P_{tot}	Total Power Dissipation @ $T_{amb} \leq 25^{\circ}C$	1W
	@ $T_{case} \leq 50^{\circ}C$	1W
T_{STG}	Storage Temperature Range	-65 to +200°C
T_J	Maximum Operating Junction Temperature	200°C
Rthj-case	Thermal resistance Junction-case	15°C/W
Rthj-amb	Thermal Resistance Junction-case-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

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO} Collector Cut-off Current	$V_{CB} = 200V$ $I_E = 0$			0.1	μA
	$T_C = 150^{\circ}C$			50	
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = 100\mu A$ $I_E = 0$	250			V
$V_{CEO(sus)^*}$ Collector – Emitter Sustaining Voltage	$I_C = 20mA$ $I_B = 0$	200			
V_{EBO}^* Emitter – Base Sustaining Voltage	$I_E = 1mA$ $I_C = 0$	6			
$V_{CE(sat)^*}$ Collector – Emitter Saturation Voltage	$I_C = 0.5A$ $I_B = 50mA$			0.2	
$V_{BE(sat)^*}$ Base – Emitter Saturation Voltage	$I_C = 0.5A$ $I_B = 50mA$			1.1	
h_{FE}^* DC Current Gain	$I_C = 20mA$ $V_{CE} = 5V$	40			—
	$I_C = 0.5A$ $V_{CE} = 5V$	40	80		
	$I_C = 20mA$ $V_{CE} = 2V$ $T_C = -55^{\circ}C$	16			
f_T Transition Frequency	$I_C = 100mA$ $V_{CE} = 10V$	50			MHz
C_{CBO} Collector – Base Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1MHz$			30	pF
t_{on} Turn-On Time	$I_C = 0.5A$ $V_{CC} = 20V$		0.3		μs
t_{off} Turn-Off Time	$I_{B1} = -I_{B2} = 50mA$		1		
$I_{s/b}^{**}$ Second Breakdown Collector Current	$V_{CE} = 50V$	0.2			A

NOTES

* Pulse Test: $t_p = 300\mu s$, $\delta = 1.5\%$

** Pulse Test: 1sec, non-repetitive pulse.