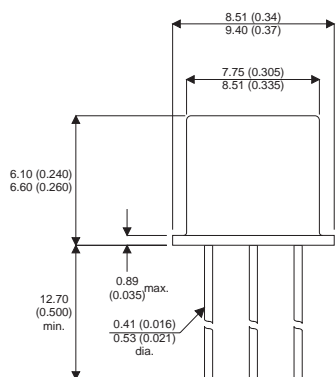


MECHANICAL DATA

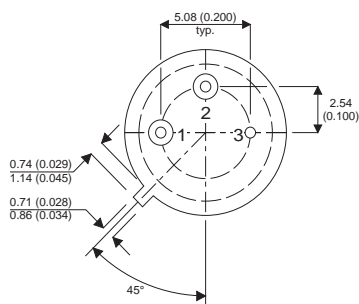
Dimensions in mm(inches)

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	120V
V_{CEO}	Collector – Emitter Voltage	60V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Maximum Collector Current	5A
I_B	Maximum Base Current	2A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	20W
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^{\circ}C$	0.87W
$R_{\theta JC}$	Thermal Resistance Junction to Case	7.5°C/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	172.4°C/W
T_j, T_{stg}	Maximum Junction And Storage Temperature Range	-65°C to +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 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CEO}	Collector - Emitter Breakdown Voltage $I_C = 100mA$	60			V
V_{CBO}	Collector - Base Breakdown Voltage $I_C = 5mA$	120			
V_{EBO}	Emitter - Base Breakdown Voltage $I_E = 1.0mA$	6			
I_{CES}	Collector - Emitter Cut-Off Current $V_{CE} = 60V$			10	μA
I_{CBO}	Collector - Base Cut-Off Current $V_{CB} = 80V$			10	
I_{EBO}	Emitter - Base Cut-Off Current $V_{EB} = 4V$			10	
$V_{CE(sat)^*}$	Collector - Emitter Saturation Voltage $I_C = 5A$ $I_B = 0.5A$			1.0	V
$V_{BE(sat)^*}$	Base - Emitter Saturation Voltage $I_C = 5A$ $I_B = 0.5A$			1.6	
h_{FE}	DC Gain $V_{CE} = 2V$ $I_C = 2A$	40		150	—
f_t	Transition Frequency $V_{CE} = 5V$ $I_C = 0.5A$ $f = 20MHz$	70			MHz
C_{obo}	Output Capacitance $V_{CB} = 10V$ $f = 1MHz$			100	pF
C_{ibo}	Input Capacitance $V_{EB} = 0.5V$ $f = 1MHz$			400	
t_{on}	Turn On Time $I_C = 5A$ $I_{B1} = 0.5A$			0.6	μs
t_{off}	Turn Off Time $I_C = 5A$ $I_{B1} = I_{B2} = 0.5A$			1.2	

*Pulsed $t_p = 300\mu s$ @ < 1%