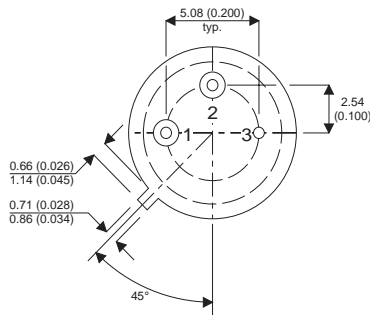
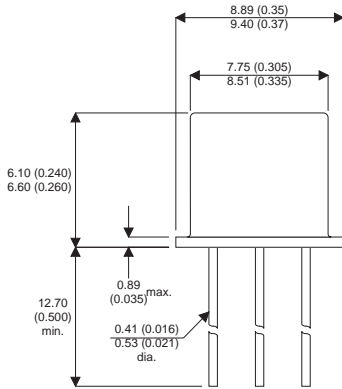


MECHANICAL DATA

Dimensions in mm(inches)



TO39

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

NPN SILICON TRANSISTOR

FEATURES

- FAST SWITCHING
- HIGH PULSE POWER

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

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

V_{CBO}	Collector – Base Voltage	100V
V_{CEO}	Collector – Emitter Voltage	80V
V_{EBO}	Emitter – Base Voltage	5V
I_C	Collector Current	3A
I_B	Base Current	2A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	1W
T_{amb}	Ambient Operating Temperature	-55°C to +200°C
T_{stg}	Storage Temperature	-55°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 ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{21E} Static Value of Common Emitter Forward Current Transfer Ratio	$V_{CE} = 10V$ $I_C = 0.15$	50		250	—
	$V_{CE} = 10V$ $I_C = 2A$	15			
	$V_{CE} = 10V$ $I_C = 1mA$	20			
f_T Transistion Frequency	$V_{CE} = 5V$ $I_C = 100mA$ $f = 20MHz$	50			MHz
I_{CBO} Collector Base Cut- Off Current.	$V_{CB} = 80V$ $I_E = 0$ $t = 150^{\circ}\text{C}$			100	nA
				100	μA
I_{EBO} Emitter–Base Cut-off Current	$V_{EB} = 4V$			100	nA
h_{21e} Small Signal Common Emitter Forward Current Transfer Ratio	$V_{CE} = 5V$ $I_C = 10mA$ $f = 1KHz$	25			—
$V_{CE(sat)^*}$ Collector – Emitter Saturation Voltage*	$I_C = 150mA$ $I_B = 15mA$			0.3	V
	$I_C = 1A$ $I_B = 0.1A$			0.6	
$V_{BE(sat)^*}$ Base – Emitter Saturation Voltage*	$I_C = 150mA$ $I_B = 15mA$			0.95	V
	$I_C = 1A$ $I_B = 0.1A$			1.3	
C_{22b} Common – Base Output Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1MHz$			80	pF

*Pulse Conditions: Pulse Length = $300\mu\text{s}$ duty cycle = 1.5%