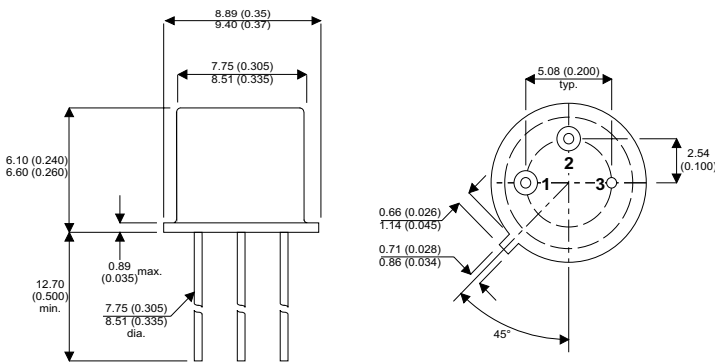


**MECHANICAL DATA**

Dimensions in mm(inches)

**NPN SILICON TRANSISTOR**



**FEATURES**

- FAST SWITCHING
- HIGH PULSE POWER

**APPLICATIONS**

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

**TO39**

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	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

**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	$V_{CE} = 5V$ $f = 20MHz$	$I_C = 100mA$	50		MHz
$I_{CBO}$	Collector Base Cut- Off Current.	$V_{CB} = 80V$	$I_E = 0$		100	nA
			$t = 150^{\circ}\text{C}$		100	$\mu\text{A}$
$I_{EBO}$	Emitter–Base Cut-off Current	$V_{EB} = 4V$			100	nA
$h_{21e}$	Small Signal Common Emitter Forward Current Transfer Ratio	$V_{CE} = 5V$ $f = 1KHz$	$I_C = 10mA$	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	$V_{CB} = 10V$ $f = 1MHz$	$I_E = 0$		80	pF

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