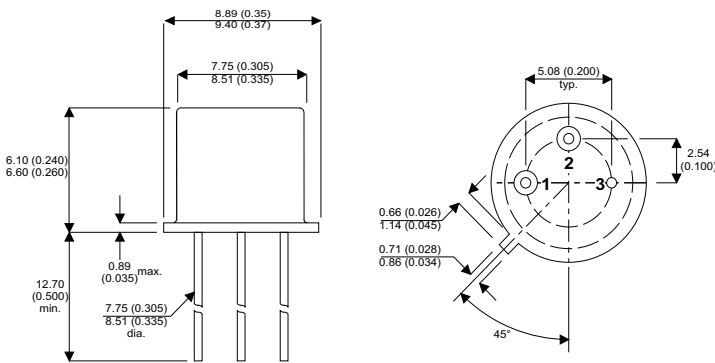


MECHANICAL DATA

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	μA
I_{EBO}	Emitter–Base Cut-off Current	$V_{EB} = 4V$			100	nA
h_{21e}	Small Signal Common Emitter Forward Current Transfer Ratio	$V_{CE} = 5V$ $f = 1KHz$	$I_C = 10mA$	25		—
$V_{CE(sat)^*}$	Collector – Emitter Saturation Voltage*	$I_C = 150mA$ $I_C = 1A$	$I_B = 15mA$		0.3	V
			$I_B = 0.1A$		0.6	
$V_{BE(sat)^*}$	Base – Emitter Saturation Voltage*	$I_C = 150mA$ $I_C = 1A$	$I_B = 15mA$		0.95	V
			$I_B = 0.1A$		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%



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