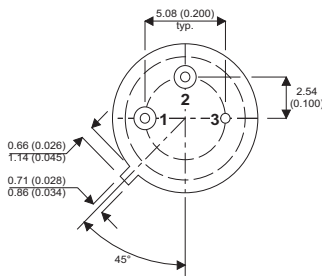
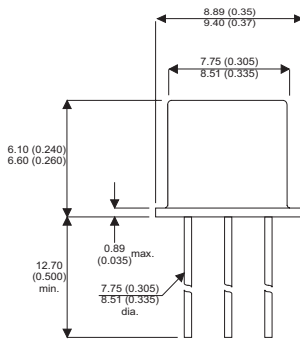


MECHANICAL DATA

Dimensions in mm (inches)

PNP SILICON TRANSISTOR



TO-39 METAL PACKAGE

Underside View

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

FEATURES

- High Voltage Switching
- Low Power Amplifier Applications
- Hermetic TO39 Package

APPLICATIONS:

- General Purpose
- High Speed Saturated Switching

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

V_{CEO}	Collector – Emitter Voltage	175V
V_{CBO}	Collector – Base Voltage	175V
V_{EBO}	Emmitter – Base Voltage	5V
I_C	Collector Current	1A
P_D	Total Device Dissipation @ $T_A = 25^{\circ}C$	1W
	Derate above $25^{\circ}C$	5.71mW/ $^{\circ}C$
P_D	Total Device Dissipation @ $T_C = 25^{\circ}C$	5W
	Derate above $25^{\circ}C$	28.6mW / $^{\circ}C$
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-65 to +200 $^{\circ}C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
OFF CHARACTERISTICS						
BV_{CEO}	Collector–Emitter Breakdown Voltage ¹	$I_C = 10\text{mA}$	$I_B = 0$	175		V
BV_{CBO}	Collector – Base Breakdown Voltage	$I_C = 100\mu\text{A}$	$I_E = 0$	175		
BV_{EBO}	Emitter – Base Breakdown Voltage	$I_C = 0$	$I_E = 10\mu\text{A}$	5.0		
I_{EBO}	Emitter Cut-off Current	$V_{BE} = 3.0\text{V}$	$I_C = 0$		50	nA
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100\text{V}$	$I_E = 0$		100	
ON CHARACTERISTICS						
h_{FE}	DC Current Gain	$I_C = 0.1\text{mA}$	$V_{CE} = 10\text{V}$	80		-
		$I_C = 1\text{mA}$	$V_{CE} = 10\text{V}$	90		
		$I_C = 10\text{mA}$	$V_{CE} = 10\text{V}$	100		
		$I_C = 50\text{mA}$	$V_{CE} = 10\text{V}$	100	300	
		$I_C = 150\text{mA}$	$V_{CE} = 10\text{V}$	50		
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage ¹	$I_C = 10\text{mA}$	$I_B = 1\text{mA}$		0.3	V
		$I_C = 50\text{mA}$	$I_B = 5\text{mA}$		0.5	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	$I_C = 10\text{mA}$	$I_B = 1\text{mA}$		0.8	V
		$I_C = 50\text{mA}$	$I_B = 5\text{mA}$.65	0.9	
SMALL SIGNAL CHARACTERISTICS						
f_t	Current Gain Bandwidth Product	$V_{CE} = 20\text{V}$	$I_C = 50\text{mA}$ $f = 100\text{MHz}$	200		MHz
C_{ob}	Output Capacitance	$V_{CB} = 20\text{V}$	$I_E = 0$ $f = 100\text{kHz}$		10	pF
C_{ib}	Input Capacitance	$V_{BE} = 1.0\text{V}$	$I_C = 0$ $f = 100\text{kHz}$		75	pF
h_{ie}	Input Impedance			200	1200	Ω
h_{re}	Voltage Feedback Ratio	$V_{CE} = 10\text{V}$	$I_C = 10\text{mA}$		3.0	$\times 10^{-4}$
h_{fe}	Small Signal Current Gain		$f = 1\text{kHz}$	80	320	—
h_{oe}	Output Admittance				200	μmhos
NF		$V_{CE} = 10\text{V}$ $R_S = 1.0\Omega$	$I_C = 0.5\text{mA}$ $f = 1\text{kHz}$		3.0	dB
SWITCHING CHARACTERISTICS						
t_{on}	Turn–On Time	$V_{CC} = 100\text{V}$	$V_{BE} = 4.0\text{V}$		400	ns
t_{off}	Turn–Off Time	$I_C = 50\text{mA}$	$I_{B1} = I_{B2} = 5\text{mA}$		600	

1) Pulse test : Pulse Width < 300 μs ,Duty Cycle < 2%