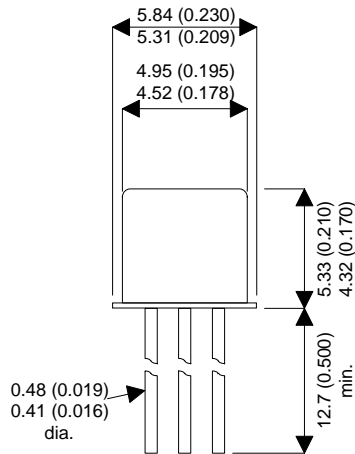


**MECHANICAL DATA**

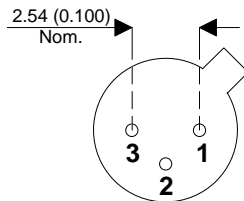
Dimensions in mm (inches)

**PNP SILICON EPITAXIAL TRANSISTOR**



**APPLICATIONS**

- It is suitable for a wide range of applications including low noise, low current high gain RF and wide band pulse amplifiers.



**TO18 PACKAGE**

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 ( $I_E = 0$ )	-30V
$V_{CEO}$	Collector – Emitter Voltage ( $I_B = 0$ )	-30V
$V_{EBO}$	Emitter – Base Voltage ( $I_C = 0$ )	-5V
$I_C$	Collector Current	-100mA
$P_{tot}$	Total Power Dissipation $T_{amb} \leq 25^{\circ}C$	0.36W
	$T_{case} \leq 25^{\circ}C$	1W
$T_j, T_{stg}$	Storage Temperature, Operating Junction Temperature	-65 to 200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$ Collector Cut-off Current	$V_{BE} = 0$			-15	nA
	$V_{CE} = -20\text{V}$   $T_{amb} = 125^\circ\text{C}$			-15	$\mu\text{A}$
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_E = 0$   $I_C = 10\mu\text{A}$	-30			V
$V_{(BR)CEO}^*$ Collector– Emitter Breakdown Voltage	$I_C = -10\text{mA}$   $I_B = 0$	-30			V
$V_{(BR)EBO}$ Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}$   $I_C = 0$	-5			V
$V_{CE(sat)}^*$ Collector – Emitter Saturation Voltage	$I_C = -1\text{mA}$   $I_B = -0.1\text{mA}$			-0.13	V
	$I_C = -10\text{mA}$   $I_B = -1\text{mA}$		-0.1	-0.14	
	$I_C = -50\text{mA}$   $I_B = -5\text{mA}$			-0.3	
$V_{BE(sat)}^*$ Base – Emitter Saturation Voltage	$I_C = -1\text{mA}$   $I_B = -0.1\text{mA}$			-0.75	V
	$I_C = -10\text{mA}$   $I_B = -1\text{mA}$		-0.77	-0.9	
	$I_C = -50\text{mA}$   $I_B = -5\text{mA}$			-1.1	
$h_{FE}^*$ DC Current Gain	$I_C = -10\mu\text{A}$   $V_{CE} = -1\text{V}$	40	80		—
	$I_C = -100\mu\text{A}$   $V_{CE} = -1\text{V}$	70	130		
	$I_C = -10\text{mA}$   $V_{CE} = -1\text{V}$	90	160		
	$I_C = -50\text{mA}$   $V_{CE} = -1\text{V}$	20	40		
	$I_C = -10\text{mA}$   $V_{CE} = -1\text{V}$ $T_{amb} = -55^\circ\text{C}$	30			
$f_T$ Transistion Frequency	$I_C = -10\text{mA}$   $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	400	550		MHz
$C_{EBO}$ Emitter – Base Capacitance	$I_C = 0$   $V_{EB} = -0.5\text{V}$ $f = 1\text{MHz}$		4	5.5	pF
$C_{CBO}$ Collector-Base Capacitance	$I_E = 0$   $V_{CB} = -10\text{V}$ $f = 1\text{MHz}$		2.2	3.5	
NF Noise Figure	$I_C = -1\text{mA}$   $V_{CE} = -5\text{V}$ $f = 100\text{MHz}$   $R_g = 100\Omega$		3.5	6	dB
$t_{on}$ Turn-on time	$I_C = -50\text{mA}$   $I_{B1} = -5\text{mA}$		20	50	ns
$t_{off}$ Turn-off time	$I_C = -50\text{mA}$ $I_{B1} = I_{B2} = -5\text{mA}$		95	160	ns
$r_{bb}C_{b'c}$ Feedback Time Constant	$I_C = -10\text{mA}$   $V_{CE} = -20\text{V}$ $f = 80\text{MHz}$			40	ps

\*Pulsed: pulse duration = 300 $\mu\text{s}$ , duty cycle = 1%

**THERMAL CHARACTERISTICS**

$R_{\theta th(j-case)}$ Thermal Resistance Junction - Case		175		$^\circ\text{C/W}$
$R_{\theta th(j-amb)}$ Thermal Resistance Junction - Ambient		486		$^\circ\text{C/W}$