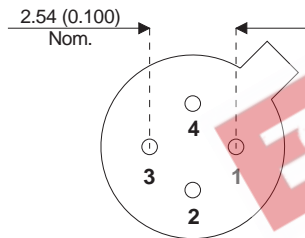
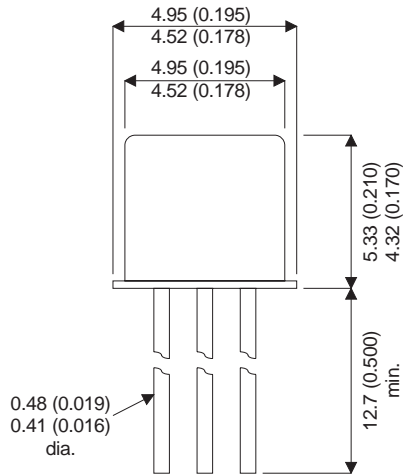


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO-72 METAL PACKAGE**

**NPN TRANSISTOR**

**FEATURES**

- SILICON NPN TRANSISTOR

**APPLICATIONS:**

- AMPLIFIER, OSCILLATOR AND CONVERTER APPLICATIONS UP TO 500MHz

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise stated)

$V_{CBO}$	Collector – Base Voltage	30V
$V_{CEO}$	Collector – Emitter Voltage	15V
$V_{EBO}$	Emitter – Base Voltage	2.5V
$I_C$	Collector Current	40mA
$P_D$	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	200mW
$P_D$	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	300mW
$T_{STG}, T_J$	Operating and Storage Temperature Range	-65 to $200^\circ\text{C}$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CBO}^*$ Collector – Base Breakdown Voltage	$I_C = 1\mu\text{A}$ $I_E = 0$	30			V
$V_{(BR)CEO}$ Collector – Emitter Breakdown Voltage	$I_C = 3\text{mA}$ $I_B = 0$	15			
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	2.5			
$I_{CBO}$ Collector – Base Cut-off Current	$V_{CB} = 15\text{V}$ $I_E = 0$			10	nA
	$T_{amb} = 150^\circ\text{C}$			1	$\mu\text{A}$
$h_{FE}$ DC Current Gain	$V_{CE} = 1\text{V}$ $I_C = 3\text{mA}$	30		150	—
NF Noise Figure	$V_{CE} = 6\text{V}$ $I_C = 1.5\text{mA}$ $f = 450\text{MHz}$ $R_G = 50\Omega$		3.8	4.5	dB
$C_{EBO}$ Emitter Base Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1\text{MHz}$		1.4		pF
$G_{pe}$ Power Gain (Neutralised)	$V_{CE} = 6\text{V}$ $I_C = 1.5\text{mA}$ $f = 450\text{MHz}$ $R_G = 50\Omega$	12.5		19	dB
$r_{bB}'C_{b'c}$ Feedback Time Constant	$V_{CB} = 6\text{V}$ $I_C = 2\text{mA}$ $f = 31.9\text{MHz}$	4	7	15	ps
$f_T$ Transition Frequency	$V_{CE} = 6\text{V}$ $I_C = 5\text{mA}$ $f = 100\text{MHz}$	1		1.9	GHz
$C_{re}$ Reverse Capacitance	$V_{CE} = 10\text{V}$ $I_C = 0$ $f = 1\text{MHz}$		0.6	1	pF
$P_C$ Oscillator Power Output	$V_{CB} = 10\text{V}$ $I_C = 12\text{mA}$ $f = 500\text{MHz}$	30			mW