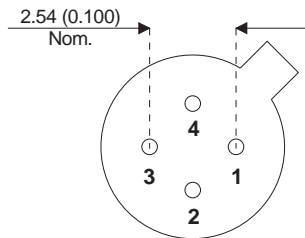
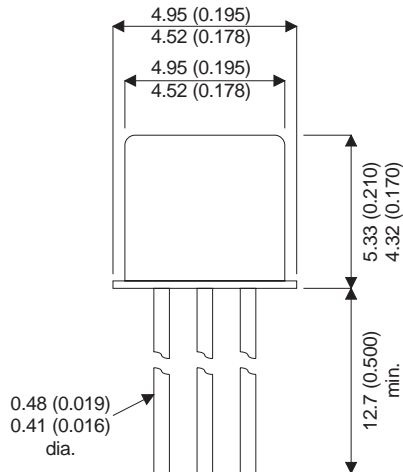


MECHANICAL DATA

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°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	μA
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