

## NTE160 Germanium PNP Transistor RF-IF Amp, FM Mixer OSC

**Description:**

The NTE160 is a germanium mesa PNP transistor in a TO72 metal case designed for use as a preamplifier mixer and oscillator up to 900MHz.

**Absolute Maximum Ratings:**

Collector-Emitter Voltage ( $V_{BE} = 0$ ), $V_{CES}$ .....	20V
Collector-Emitter Voltage, ( $I_B = 0$ ), $V_{CEO}$ .....	16V
Emitter-Base Voltage ( $I_C = 0$ ), $V_{EBO}$ .....	0.3V
Collector Current, $I_C$ .....	10mA
Total Power Dissipation ( $T_A = +45^\circ\text{C}$ ), $P_{tot}$ .....	60mW
Operating Junction Temperature, $T_J$ .....	+90°C
Storage Temperature Range, $T_{stg}$ .....	-30° to +75°C
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	400°C/W max
Thermal Resistance, Junction-to-Ambient, $R_{thJA}$ .....	750°C/W max

**Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CES}$	$V_{CE} = -20V, V_{BE} = 0$	-	-	-8	$\mu\text{A}$
	$I_{CEO}$	$V_{CE} = -15V, I_B = 0$	-	-	-500	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -0.3V, I_C = 0$	-	-	-100	$\mu\text{A}$
Base-Emitter Voltage	$V_{BE}$	$I_C = -2\text{mA}, V_{CE} = -10V$	-	-350	-	mV
		$I_C = -5\text{mA}, V_{CE} = -5V$	-	-400	-	mV
DC Current Gain	$h_{FE}$	$I_C = -2\text{mA}, V_{CE} = -10V$	-	50	-	
		$I_C = -5\text{mA}, V_{CE} = -5V$	-	42	-	
Transition Frequency	$f_T$	$I_C = -2\text{mA}, V_{CE} = -10V, f = 100\text{MHz}$	-	700	-	MHz
Reverse Capacitance	$-C_{re}$	$I_C = -2\text{mA}, V_{CE} = -10V, f = 450\text{kHz}$	-	0.23	-	pF
Noise Figure	NF	$I_C = -2\text{mA}, V_{CE} = -10V, R_g = 60\Omega, f = 800\text{MHz}$	-	5	6	dB
Power Gain	$G_{pb}$	$I_C = -2\text{mA}, V_{CE} = -10V, R_L = 2\text{k}\Omega, f = 800\text{MHz}$	11	14	-	dB

