

## NTE229 Silicon NPN Transistor VHF Oscillator, Mixer, IF Amp

**Absolute Maximum Ratings:**

Collector–Emitter Voltage, $V_{CEO}$ .....	30V
Collector–Base Voltage, $V_{CBO}$ .....	30V
Emitter–Base Voltage, $V_{EBO}$ .....	3V
Collector Current, $I_C$ .....	50mA
Total Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_T$ .....	425mW
Derate above $+25^\circ\text{C}$ .....	5mW/ $^\circ\text{C}$
Operating Junction Temperature, $T_J$ .....	+150 $^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	–55 $^\circ$ to +150 $^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" $\pm$ 1/32" from case, 10sec), $T_L$ .....	+230 $^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	30	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	3	–	–	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 30\text{V}, I_E = 0$	–	–	200	nA
DC Current Gain	$h_{FE}$	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	30	–	225	
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 1\text{mA}, I_B = 0$	30	–	–	V
Base–Emitter ON Voltage	$V_{BE(on)}$	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	–	–	0.85	V
Current Gain–Bandwidth Product	$f_T$	$I_C = 5\text{mA}, V_{CE} = 10\text{V},$ $f = 100\text{MHz}$	500	–	–	MHz
Power Gain	$G_{pe}$	$V_{CC} = 12\text{V}, V_{BB} = 2.5\text{V},$ $f = 45\text{MHz}$	28	–	–	dB
Collector–Base Capacitance	$C_{cb}$	$I_E = 0, V_{CB} = 15\text{V}, f = 1\text{MHz}$	–	–	0.4	pF
Noise Figure	NF	$V_{CC} = 12\text{V}, f = 45\text{MHz}$	–	–	6	dB

