



ELECTRONICS, INC.
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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

