



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE233 Silicon NPN Transistor Video IF, Oscillator

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	100mA
Total Power Dissipation ($T_A = +25^\circ\text{C}$), P_T	625mW
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° 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	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	3	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$	–	–	50	nA
	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$	–	–	1	μA
DC Pulse Current Gain	h_{FE}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$, Note 1	20	–	100	
Collector Saturation Voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}, I_B = 0.1\text{mA}$, Note 1	–	0.6	–	V
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 1\text{mA}, I_B = 0$, Note 1	30	–	–	V
Current Gain–Bandwidth Product	f_T	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$, $f = 100\text{MHz}$	300	–	700	MHz
Power Gain, Fixed Neutralization	G_{pe}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$, $f = 45\text{MHz}$	25	–	–	dB
Reverse Transfer Capacitance	C_{re}	$I_E = 0, V_{CB} = 10\text{V}, f \leq 1\text{MHz}$	0.6	–	1.1	pF
Output Admittance, Input Short Circuit	g_{oe}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$, $f = 45\text{MHz}$	30	–	200	μmho

Note 1. Pulse Test: Pulse Width = 300 μs , Duty Cycle = 1%.

