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

NTE107
Silicon NPN Transistor
UHF Oscillator for Tuner

Description:

The NTE107 is a silicon NPN planar epitaxial transistor in a TO92 type package designed specifically for high frequency applications. This device is suitable for use as an oscillator in UHF television tuners.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO} 30V
Collector–Emitter Voltage, V_{CEO} 12V
Emitter–Base Voltage, V_{EBO} 3V
Collector Current, I_C 25mA
Total Power Dissipation (T_A = +25°C), P_T 200mW
Derate above +25°C . . . . . 2.67mW/°C
Operating Junction Temperature, T_J . . . . . +100°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C
Lead temperature (During Soldering, 1/16” ±1/32” from case, 10sec), T_L . . . . . +260°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA	30	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_{CEO} = 3mA, Note 1	12	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA	3	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 15V, I_E = 0	–	–	0.5	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 2V, I_C = 0	–	–	0.5	μA
Forward Current Transfer Ratio	h_{FE}	V_{CE} = 10V, I_C = 8mA	20	75	–	
Collector Saturation Voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 1mA	–	–	0.6	V

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

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 5mA, V_{CE} = 10V, f = 100MHz	700	–	2100	MHz
Output Capacitance	C_{ob}	V_{CE} = 10V, I_E = 0, f = 1MHz	0.8	–	1.5	pF
Noise Figure	NF	I_C = 1mA, V_{CB} = 6V, f = 60MHz, R_G = 400Ω	–	4.0	6.5	dB