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NTE994M
Integrated Circuit
Voltage Controlled Oscillator

Description:

The NTE994M is a general purpose voltage controlled oscillator in an 8–Lead DIP type package which may be used to generate square and triangular waves, the frequency of which is a very linear function of a control voltage. The frequency is also a function of an external resistor and capacitor. The NTE994M is specified for operation over the 0°C to +70°C temperature range.

Features:

- Wide Supply Voltage Range: 10 to 24Volts
- Very linear modulation characteristics
- High temperature stability
- Excellent supply voltage rejection
- 10 to 1 frequency range with fixed capacitor
- Frequency programmable by means of current, voltage, resistor or capacitor

Applications:

- FM Modulation
- Signal Generation
- Function generation
- Frequency shift keying
- Tone generation

Absolute Maximum Ratings:

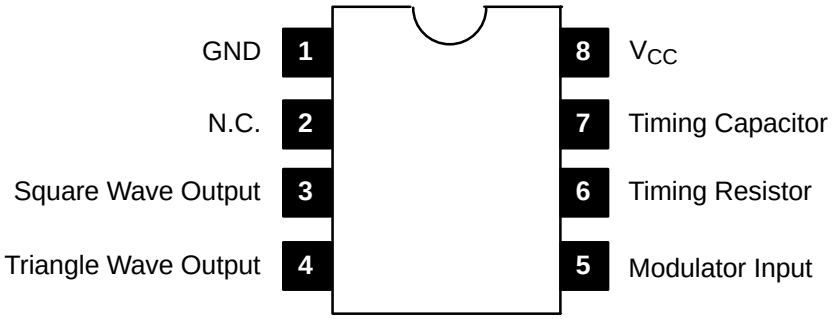
Power Supply Voltage 26V
Power Dissipation (Note 1) 300mW
Operating Temperature Range . . . . . 0°C to +70°C
Lead Temperature Setting (Soldering, 10 sec) . . . . . +300°C

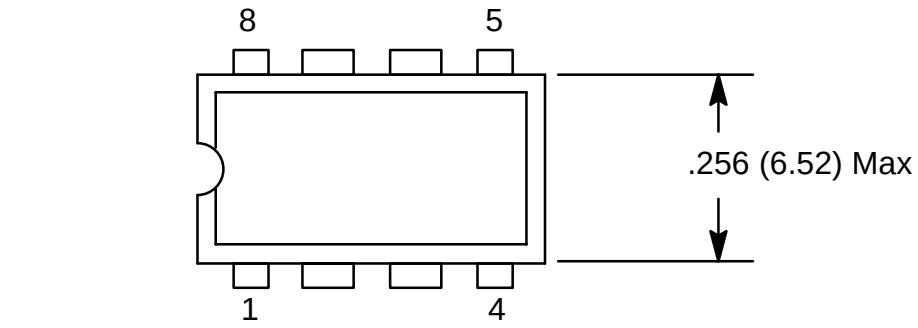
Note 1. The maximum junction temperature of the NTE994M is 100°C. For operating at elevated junction temperatures, devices must be derated based on a thermal resistance of 100°C/W.

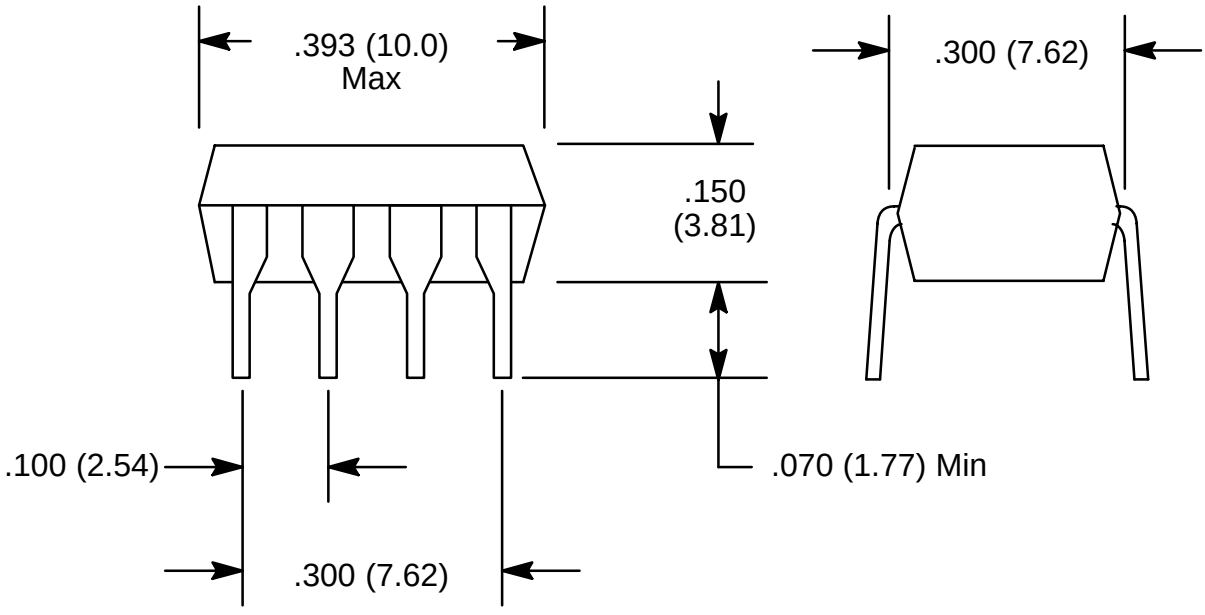
Electrical Characteristics: (V_{CC} = 12V, T_A = +25°C unless otherwise specified)

Parameter	Conditions	Min	Typ	Max	Units
Maximum Operating Frequency	R_O = 2k, C_O = 2.7pf	–	1	–	MH_Z
Input Voltage Range Pin 5		$^3/_4V_{CC}$	–	V_{CC}	–
Average Temperature Coefficient of Operating Frequency		–	200	–	ppm/°C
Supply Voltage Rejection	10V to 20V	–	0.1	2	%/V
Input Impedance Pin 5		0.5	1	–	MΩ
VCO Sensitivity	For Pin 5, from 8V to 10V, $f_O = 10kH_Z$	6.0	6.6	7.2	kH_Z/V
FM Distortion	±10 Deviation	–	0.2	1.5	%
Maximum Sweep Rate		500	1	–	MH_Z
Sweep Range		–	10:1	–	–
Output Impedance Pin 3 Pin 4		– –	50 50	– –	Ω
Square Wave Output Level	R_{L1} = 10k	5.0	5.4	–	V_{p-p}
Triangle Wave Output Level	R_{L2} = 10k	2.0	2.4	–	V_{p-p}
Square Wave Duty Cycle		40	50	60	%
Square Wave Rise Time		–	20	–	ns
Square Wave Fall Time		–	50	–	ns
Triangle Wave Linearity	+1V Segment @ $^1/_2V_{CC}$	–	0.5	1	%

Pin Connection Diagram




8
5
.256 (6.52) Max
1
4


.393 (10.0)
Max
.300 (7.62)
.150
(3.81)
.100 (2.54)
.070 (1.77) Min
.300 (7.62)