

Technical Data

NTH / NCH Series



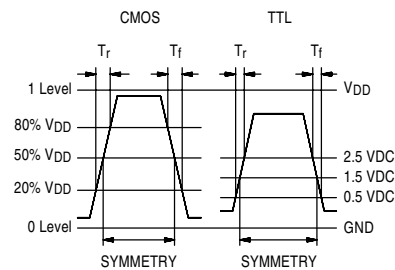
Description

A 5V crystal controlled, low current, low jitter and high frequency oscillator with precise rise and fall times demanded in networking applications, such as Gigabit Ethernet and Fibre Channel. The tri-state function on the NTH enables the output to go high impedance. Device is packaged in a 14 or an 8-pin DIP compatible resistance welded, all metal grounded case, to reduce EMI.

Applications & Features

- Fibre Channel
- Gigabit Ethernet
- 32 Bit Microprocessors
- Tri-State output on NTH
- HCMOS/TTL compatible
- SMD plastic available
- 3.3V version available

Output Waveform



Frequency Range:	500 kHz to 106.25 MHz
Frequency Stability:	±20*, ±25, ±50 or ±100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, 30 day aging, shock and vibration.
*See Part Numbering Guide	

Temperature Range:	
Operating:	0 to +70°C or -40 to +85°C
Storage:	-55 to +125°C

Supply Voltage:	
Recommended Operating:	+5VDC ±10%

Supply Current:	
0.5 to 8 MHz:	12mA
8+ to 24 MHz:	20mA
24+ to 50 MHz:	35mA
50+ to 80 MHz:	50mA
80+ to 106.25 MHz:	65mA

Output Drive:	
<u>HCMOS</u>	Symmetry: measured @50%VDD, See Part Numbering Guide
Rise and Fall Times:	8ns max to 24 MHz @20% to 80% VDD 5ns max 24+ to 80 MHz 2ns max 80+ to 106.25 MHz
Logic 0:	10% VDD max
Logic 1:	90% VDD min
Load:	50pF to 50MHz, 30pF 50+ to 70 MHz, 15pF 70+ to 106.25 MHz
RMS Period Jitter:	8ps max
<u>TTL</u>	Symmetry: measured @1.5V level, See Part Numbering Guide
Rise and Fall Times:	6ns max to 24 MHz @ 0.5 to 2.5V 3ns max 24+ to 80 MHz 1.5ns max 80+ to 106.25 MHz
Logic 0:	0.5 V max
Logic 1:	VCC -0.6V min
Load:	10TTL to 50MHz, 5TTL 50+ to 106.25 MHz
RMS Period Jitter:	8ps max

Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-883, Method 2004, Conditions B2
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition A, B or C (I or J for Gull Wing)

Environmental:	
Gross Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

Tri-State Logic Table (NTH only)

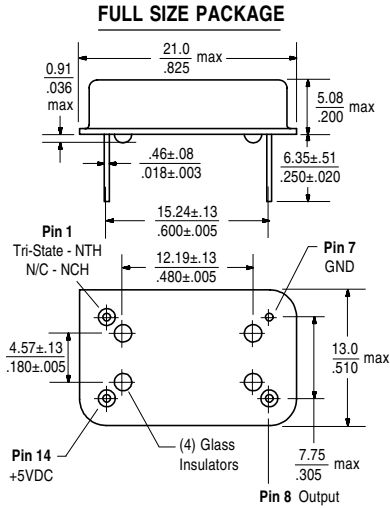
Pin 1 Input	Pin 8 (5) Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance

Required Input Levels on Pin 1:
Logic 1 = 3.0 V min
Logic 0 = 0.5V max

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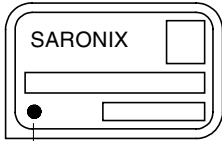
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Package Details

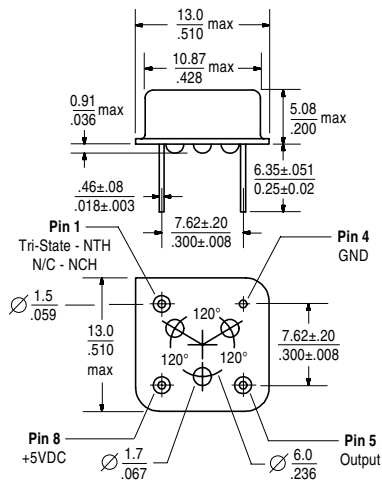


Marking Format **

Includes Date Code, Frequency & Model



HALF SIZE PACKAGE



Marking Format **

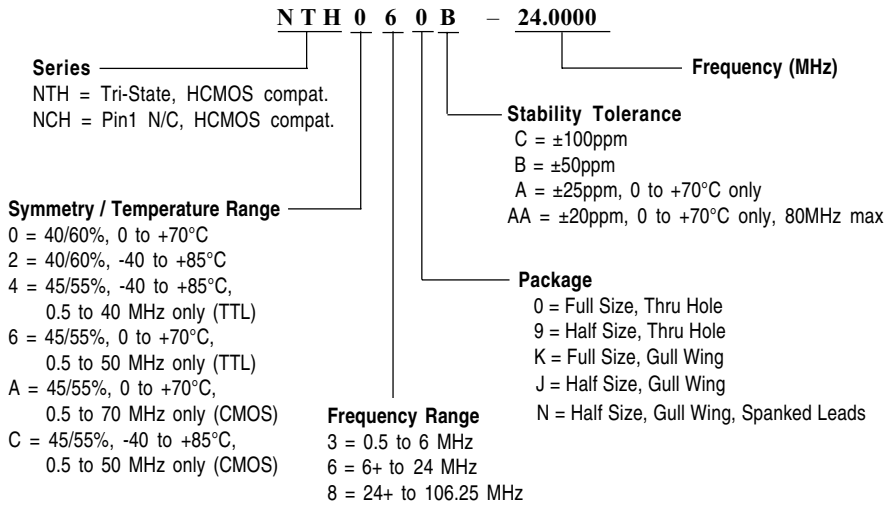
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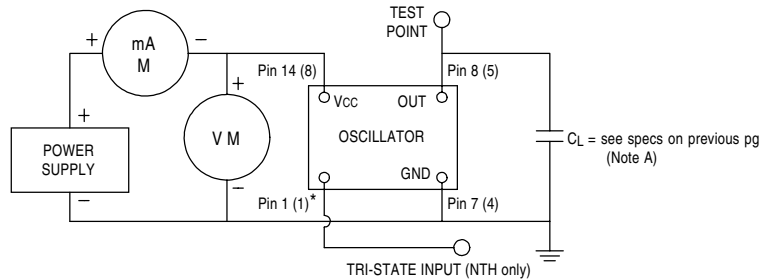
** Exact location of items may vary

Scale: None (Dimensions in $\frac{mm}{inches}$)

Part Numbering Guide



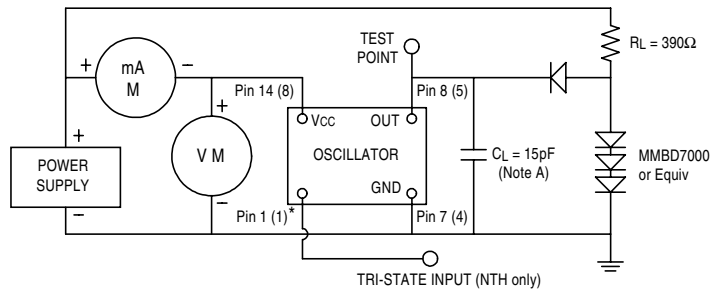
Test Circuits



NOTE A: CL includes probe and fixture capacitance

* () Indicates pin numbers for half-size package

HCMOS (Used at SaRonix)



NOTE A: CL includes probe and fixture capacitance

* () Indicates pin numbers for half-size package

TTL (Optional load)

All specifications are subject to change without notice.