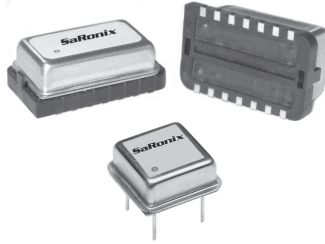


### Technical Data

NTH / NCH Series



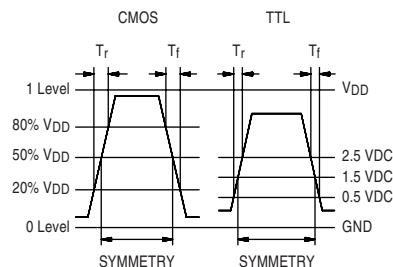
#### Description

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. True SMD DIL 14 version also available, utilizing new adaptor technology (see separate data sheet for package dimensions)

#### Applications & Features

- ADSL, DSL
- DS3, ES3, E1, STS-1, T1
- Ethernet Switch, Gigabit Ethernet
- Fibre Channel Controller
- MPEG
- Network Processors
- Voice Over Packet
- 32 Bit Microprocessors
- Tri-State output on NTH
- True SMD version available, see part number builder for package option

#### Output Waveform



<b>Frequency Range:</b>	500 kHz to 106.25 MHz	
<b>Frequency Stability:</b>	±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		
<b>Temperature Range:</b>	Operating: 0 to +70°C or -40 to +85°C Storage: -55 to +125°C	
<b>Supply Voltage:</b>	Recommended Operating: +5VDC ±10%	
<b>Supply Current:</b>	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:

<b>HCMOS</b>	Symmetry:	measured @ 50%VDD, See Part Numbering Guide
	Rise & Fall Times:	8ns max, 0.5 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
<b>TTL</b>	Symmetry:	measured @ 1.5V level, See Part Numbering Guide
	Rise & Fall Times:	6ns max, 0.5 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 and SMD)

#### 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

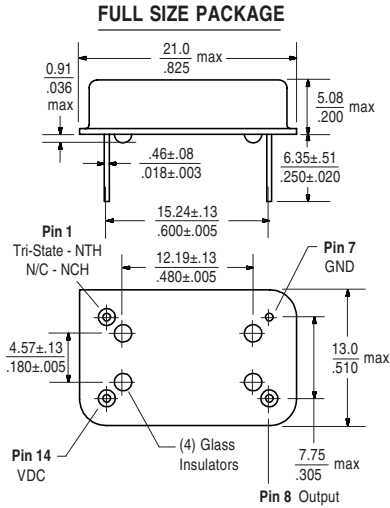
Required Input Levels on Pin 1:  
Logic 1 = 3.0 V min  
Logic 0 = 0.5V max

Output: Oscillation @ VIN, 2.2V min  
Output: High Impedance @ VIN, 0.8V max  
Internal Pullup Resistance: 50KΩ min  
Control Input: Disable Output Delay: 100ns max

### Technical Data

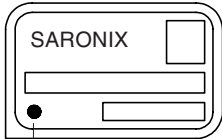
### NTH / NCH Series

#### Package Details

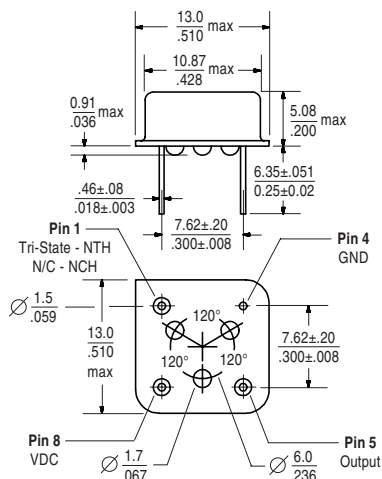


#### Marking Format \*\*

Includes Date Code, Frequency, Part Number



#### HALF SIZE PACKAGE



#### Marking Format \*\*

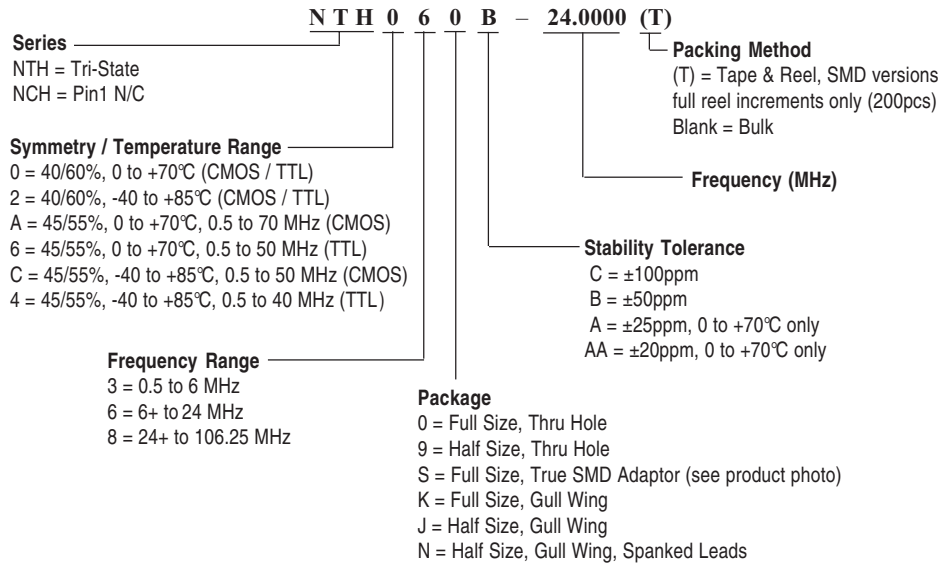
Includes Date Code, Frequency, Part Number



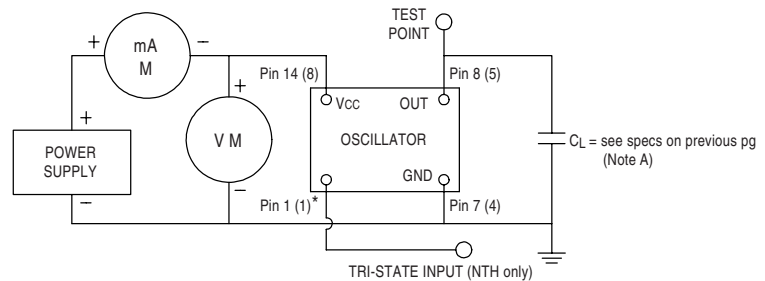
\*\* Exact location of items may vary

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

#### Part Numbering Guide



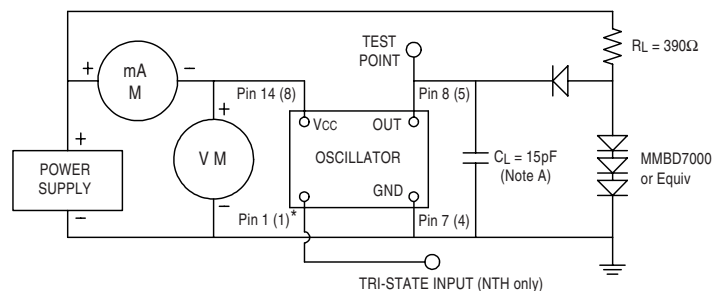
#### Test Circuits



NOTE A:  $C_L$  includes probe and fixture capacitance

\* ( ) Indicates pin numbers for half-size package

#### HCMOS (Used at SaRonix)



NOTE A:  $C_L$  includes probe and fixture capacitance

\* ( ) Indicates pin numbers for half-size package

#### TTL (Optional load)

All specifications are subject to change without notice.

## True SMD Adaptor - 7.57mm High

### Technical Data

