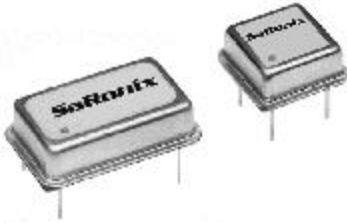


Technical Data

NTH / NCH Series



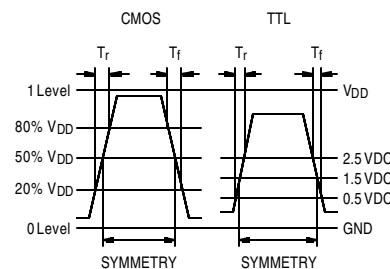
Description

A crystal controlled, low current oscillator providing precise rise and fall times to drive High Speed HCMOS and NMOS microprocessors. The tri-state function on the NTH enables the output to go high impedance. Can drive both High Speed CMOS and TTL. Device is packaged in a 14 or an 8-pin DIP compatible resistance welded, all metal grounded case, to reduce EMI.

Applications & Features

- Clock 16 and 32 bit microprocessors
- Tri-State output on NTH
- HCMOS compatible
- Grounded, all metal full size or half size case
- This versatile HCMOS product is also available as a 3V surface mount plastic version, a metal double sealed version, and a gull wing (to 80 MHz) version

Output Waveform



Frequency Range: 500 kHz to 100 MHz

Frequency Stability: ±20*, ±25, ±50 or ±100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, 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 25 MHz: 20mA
25+ to 50 MHz: 35mA
50+ to 100 MHz: 50mA

Output Drive:

HCMOS

Symmetry: See Part Numbering Guide
Rise and Fall Times: 8ns max to 25 MHz, 20% to 80% VDD
5ns max 25+ to 100 MHz
Logic 0: 10% VDD max
Logic 1: 90% VDD min
Load: 50pF to 50MHz, 30pF 50+ to 70 MHz, 15 pF 70+ to 100 MHz
Jitter: 8ps max RMS period jitter, 1ps max 1σ cycle-to-cycle jitter

TTL

Symmetry: See Part Numbering Guide
Rise and Fall Times: 6ns max to 25 MHz, 0.5 to 2.5V
5ns max 25+ to 100 MHz
Logic 0: 0.5V max
Logic 1: VCC - 0.6V min
Load: 10 TTL to 50 MHz, 5 TTL 50+ to 100 MHz
Jitter: 8ps max RMS period jitter, 1ps max 1σ cycle-to-cycle jitter

Mechanical:

Shock: MIL-STD-883, Method 2002, Condition B
Solderability: MIL-STD-883, Method 2003
Terminal Strength: MIL-STD-202, Method 211, Conditions A & C
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
5×10^{-8} ATMcc/sec
Thermal Shock: MIL-STD-883, Method 1011, Condition A
Moisture Resistance: MIL-STD-883, Method 1004

Tri-State Logic Table (NTH only)

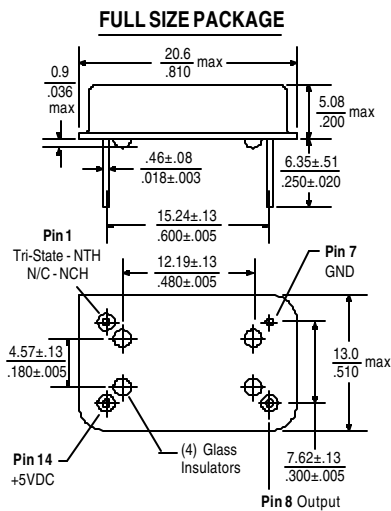
Pin 1 Input	Pin 8 (5) Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance

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

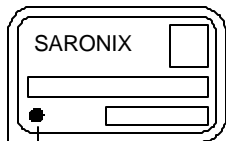
Technical Data

NTH / NCH Series

Package Details

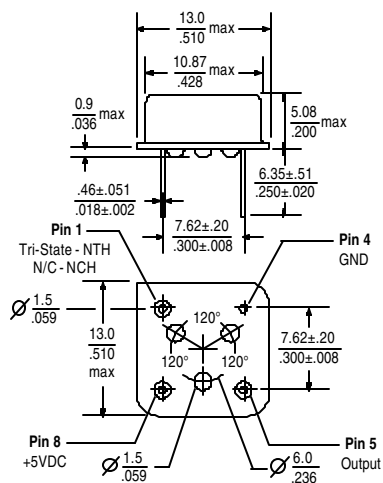


Marking Format **
Includes Date Code, Frequency & Model



Denotes Pin 1

HALF SIZE PACKAGE



Marking Format **
Includes Date Code, Frequency & Model

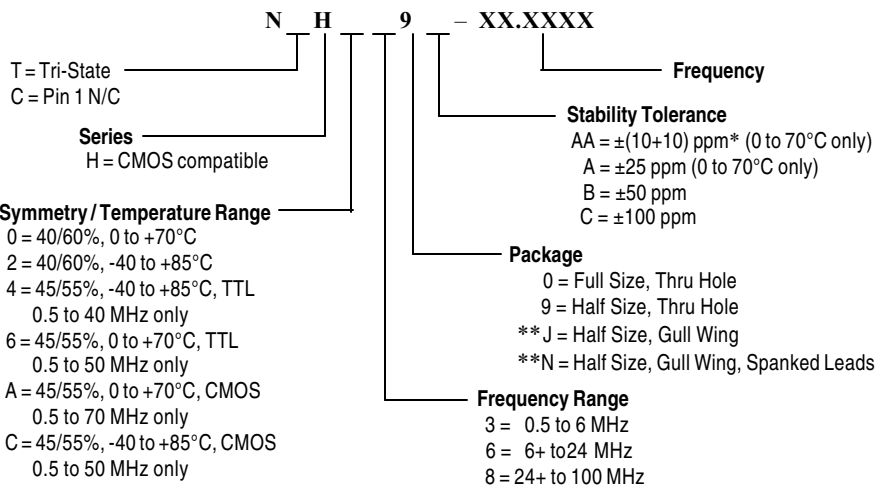


Denotes Pin 1

** Exact locations of items may vary

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

Part Numbering Guide

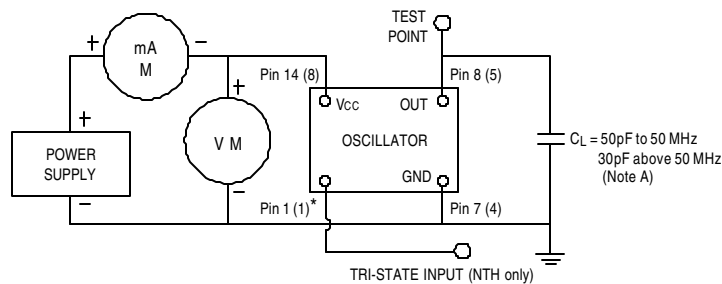


* ± 10 ppm over operating temperature range plus ± 10 ppm over all other conditions

** 80 MHz max

Example PN: NTH080C - 32.0000

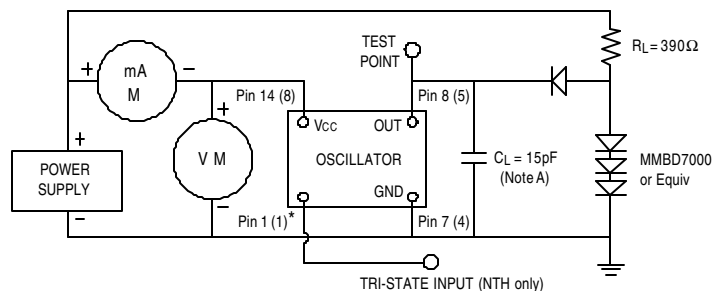
Test Circuits



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.