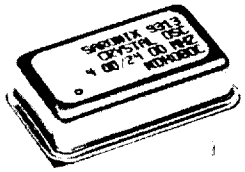
SaRonix

Crystal Clock Oscillator

DUAL OUTPUT

Technical Data

NPH / NDH Series



ACTUAL SIZE

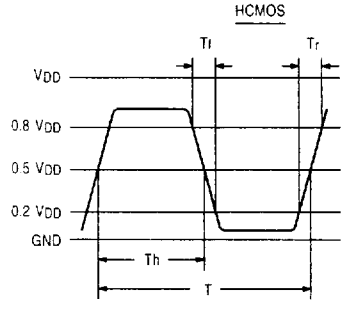
Description

A crystal controlled clock oscillator with two dependent or independent frequency HCMOS outputs in one package. This device allows for a choice of any two exact frequencies. Each unit contains an internal by-pass supply capacitor which minimizes "cross-talk" and EMI.

Applications & Features

- NPH provides two independent frequencies on two outputs in one package
- NDH provides two dependent frequencies on two outputs in one package. The two frequencies can have a ratio of 2, 4, 8, 16, 64 or 128
- CMOS and TTL compatible
- Saves board space, power and cost over two oscillator packages.

Output Waveform



$$\text{SYMMETRY} = \frac{Th}{T} \times 100\ (\%)$$

Frequency Range:	250 kHz to 80 MHz (NPH) 250 kHz to 30 MHz (NDH)
Frequency Stability:	±25, ±50 or ±100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, aging, shock and vibration.
Temperature Range:	
Operating:	0°C to +70°C
Storage:	-55°C to +125°C
Supply Voltage:	
Rated:	+5 VDC ±10%
Operating:	+7 VDC max

Supply Current:

per output	typ	max
to 24 MHz	10	20
24 ~ 60 MHz	20	35
60 MHz up	30	45

For total current, add current of both outputs.

Dual Output:	
Symmetry:	50% ±5% at 50% V_{DD}
Rise & Fall Times:	T_r = 4 ns max, T_f = 4 ns max
"0" Level:	V_{SS} +0.5V max
"1" Level:	V_{DD} -0.5V min
Output Load:	50 pF max to 50 MHz, 30 pF > 50 MHz
Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-202, Method 211, Conditions A and 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 B
Environmental:	
Gross Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2 <5 x 10^{-8} ATM cc/sec
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

Part Numbering Guide

Pin 1 Pin 8

NPH 060 C – 4.0000/24.0000

Type
NPH = HCMOS independent frequencies to 80 MHz
NDH = HCMOS dependent frequencies to 30 MHz

Model
(Based on Pin 8 frequency)
030 = 250 kHz ~ 3.9999 MHz
060 = 4.0000 MHz ~ 24.0000 MHz
080 = 24.0000 MHz up

Stability Tolerance
A = ±25 ppm (0.0025%)
B = ±50 ppm (0.005%)
C = ±100 ppm (0.010%)

Frequency (MHz)

DS-134 REV A April 1994

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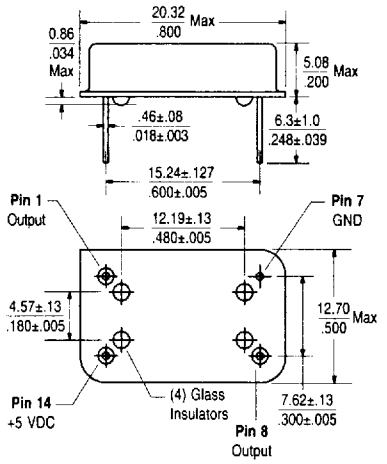
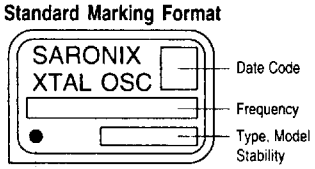
Package Details



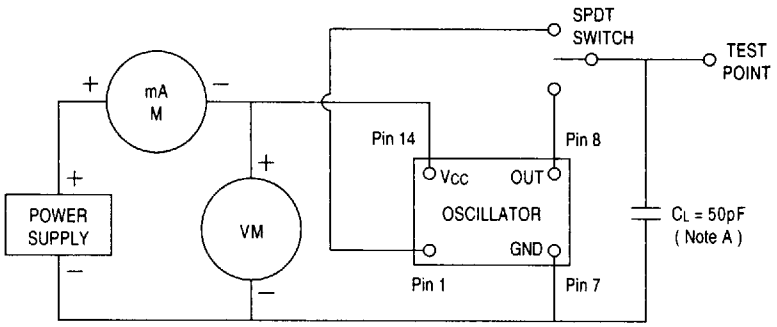
Standard Marking Format



Denotes Pin 1

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

Test Circuit



NOTE A: C_L Includes probe and fixture capacitance
50 pF to 50 MHz, 30 pF > 50 MHz

All specifications are subject to change without notice.

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