NYMPH®

# Crystal Clock Oscillator — Low Power CMOS

## by SaRonix

## Technical Data

Ref. No. Series M
Date May 1988
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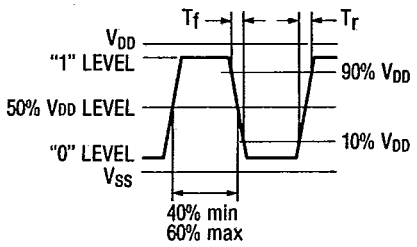
### Description

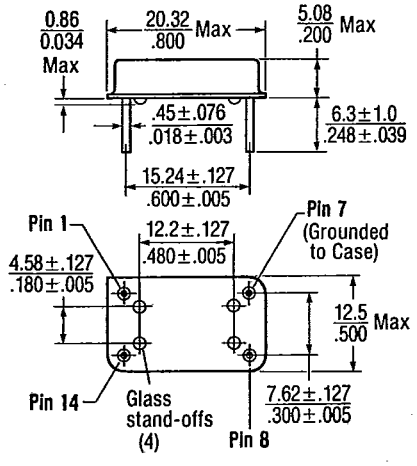
A crystal controlled, highly accurate and stable CMOS compatible oscillator. Device features include low power consumption, low aging, and a hermetically sealed all metal package.

(See "32.768 kHz CMOS" data sheet for real time applications.)

### Output Waveform

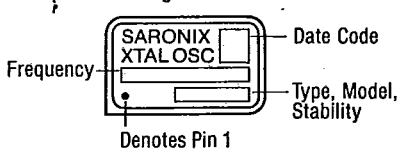



### Package




Pin 1: NC Pin 7: GND
Pin 8: Output Pin 14: +5 VDC

### Standard Marking Format




Scale: None (Dimension in mm / inches)

| | |
|---|---|
| **Frequency Range:** | 10 kHz - 2.000000 MHz |

**Frequency Tolerance:**

| Freq. Range | Initial Accuracy at 25°C | | | |
|---|---|---|---|---|
| kHz | AA | A | B | C |
| 10-74.9 | ±0.001% | ±0.003% | ±0.010% | ±0.100% |
| 75-169 | ±0.003% | ±0.005% | ±0.010% | ±0.100% |
| 170-249 | ±0.005% | ±0.010% | ±0.020% | ±0.200% |
| 250-499 | ±0.010% | ±0.020% | ±0.050% | ±0.500% |
| 500-2000 | ±0.025% | ±0.050% | ±0.100% | ±1.000% |

**Temperature Characteristic:** $\Delta f/f = K(T_0-T)^2$ where T = point of temperature comparison, K = –0.038 ppm/°C² typ.

**Temperature Range:**

| | |
|---|---|
| Operating: | –20°C to +70°C |
| Storage: | –30°C to +85°C |

| **Input Voltage:** | **Rated** | **Operating** |
|---|---|---|
| | +5 VDC ±10% | +3 VDC min. +10 VDC max. |

**Input Current @ +5.0V:** 40 µA typical @ 40.0000 kHz

**CMOS Output:**

| | |
|---|---|
| Symmetry: | 50% ±10% at 50% $V_{DD}$ |
| Rise & Fall Times: | 40 ns typical, 60 ns max. |
| "0" Level: | $V_{SS}$ +0.5V max. |
| "1" Level: | $V_{DD}$ –0.5V min. |
| Output Load: | 200 kΩ at 15 pF |

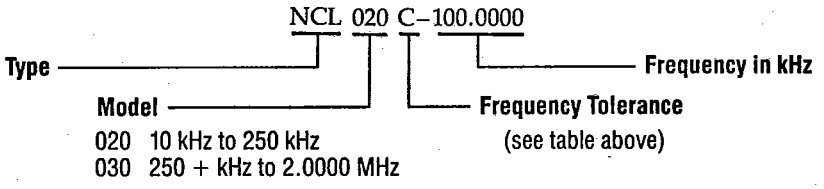
**Mechanical:**

| | |
|---|---|
| Shock: | MIL-STD-883C, Method 2002.3, Condition B |
| Solderability: | MIL-STD-883C, Method 2003.5 |
| Terminal Strength: | MIL-STD-202F, Method 211A, Conditions A and C |
| Vibration: | MIL-STD-883C, Method 2007.1, Condition A |
| Solvent Resistance: | MIL-STD-202F, Method 215C |
| Resistance to Soldering Heat: | MIL-STD-202F, Method 210A, Condition B |

**Environmental:**

| | |
|---|---|
| Gross Leak Test: | MIL-STD-883C, Method 1014.8, Condition C1 |
| Fine Leak Test: | MIL-STD-883C, Method 1014.8, Condition A2, $<5\times10^{-8}$ ATM cc/sec. |
| Thermal Shock: | MIL-STD-883C, Method 1011.7, Condition A |
| Moisture Resistance: | MIL-STD-883C, Method 1004.6 |

### Part Numbering Guide

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