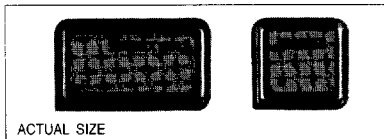
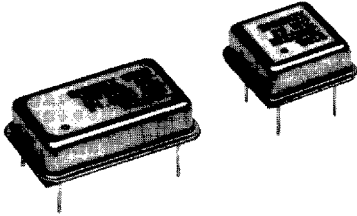


### Technical Data

NCC Series



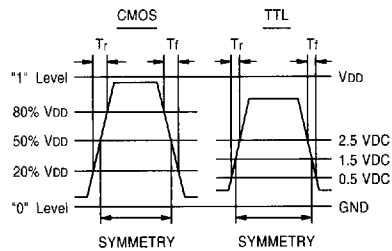
#### Description

A crystal controlled, low current hybrid oscillator providing precise rise and fall times to drive CMOS and NMOS micro-processors. Compatible with both CMOS and TTL. Can drive up to 2 LSTTL loads. Device is packaged in 14-pin or an 8-pin DIP compatible full size or half size, resistance welded, all metal case. Pin 7 (pin 4 for 1/2 size) is grounded to the case to reduce RFI.

#### Applications & Features

- Low power
- CMOS and TTL compatible output
- Enable/disable feature available
- Grounded, all metal full size and half size case

#### Output Waveform



**Frequency Range:** 62.5 kHz to 24 MHz ( 1/2 size - 250 kHz to 24 MHz )

**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: +3 VDC min, +7 VDC max

**Supply Current @ 5.0V:** (See Input Current vs. Frequency Graph, page 2)

#### Output Drive:

##### CMOS

Symmetry: 50% ±10% @ 50% VDD  
 Rise & Fall Times: 12ns max, 20% VDD to 80% VDD  
 Logic 0: VCC +0.5V max  
 Logic 1: VDD -0.5V min  
 Output Load: 2 CMOS

##### TTL

Symmetry: 50% ±10% @ 1.5V  
 Rise & Fall Times: 12ns max, 0.5V to 2.5V  
 Logic 0: .5V max  
 Logic 1: 2.5V min  
 Output Load: 2 LSTTL

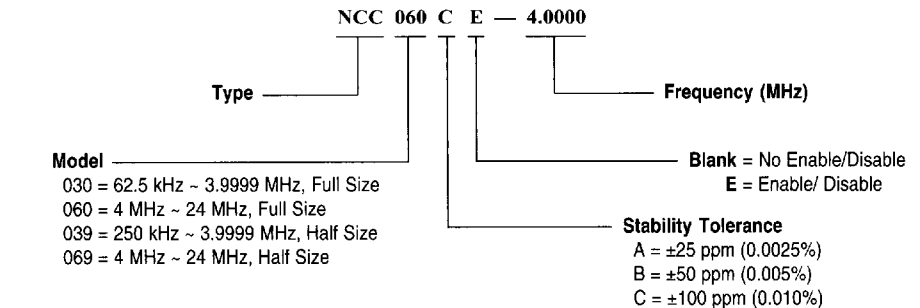
#### Mechanical:

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  
 <math>5 \times 10^{-8}</math> ATM cc/sec  
 Thermal Shock: MIL-STD-883, Method 1011, Condition A  
 Moisture Resistance: MIL-STD-883, Method 1004

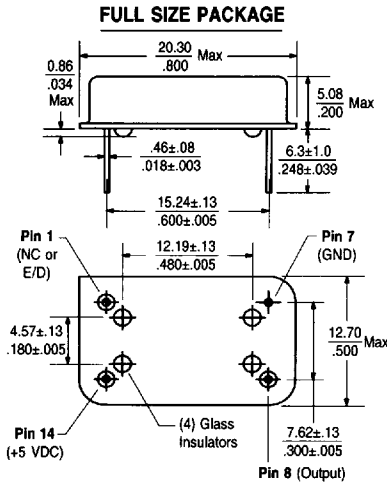
#### Part Numbering Guide



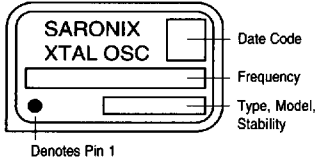
### Technical Data

NCC Series

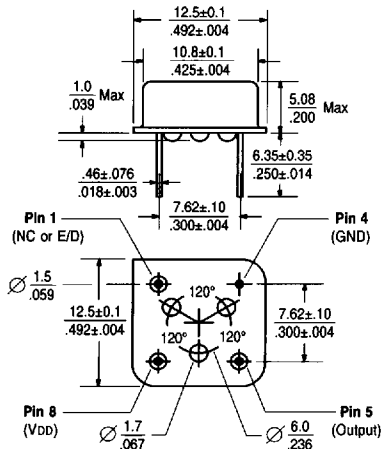
#### Package Details



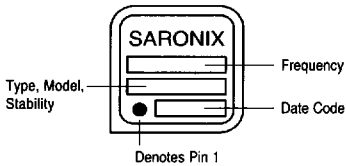
#### Standard Marking Format



#### HALF SIZE PACKAGE

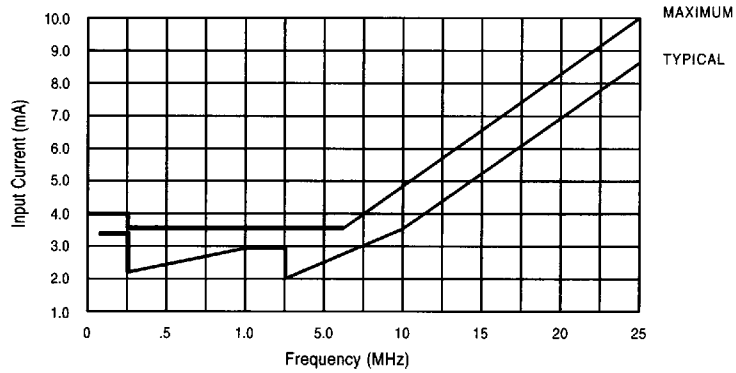


#### Standard Marking Format

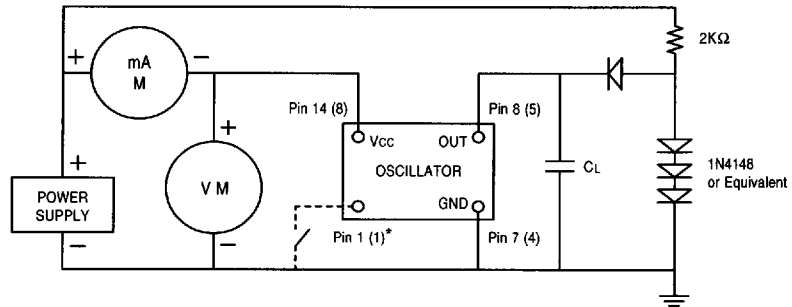


Scale: None (Dimensions in  $\frac{\text{mm}}{\text{inches}}$ )

#### Input Current vs. Frequency at +5.0V



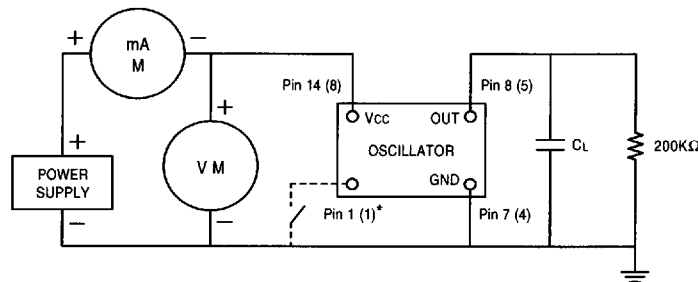
#### Test Circuits



#### NOTE:

- C<sub>L</sub> = 15 pF max (Includes probe and fixture capacitance)
- Pin 1 = No connection or Enable/Disable function optional (Enable = "1" level, Disable = "0" level).
- \* ( ) Indicates pin numbers for half-size package

#### CMOS TEST CIRCUIT (Optional)



#### NOTE:

- C<sub>L</sub> = 15 pF max (Includes probe and fixture capacitance)
- Pin 1 = No connection or Enable/Disable function optional (Enable = "1" level, Disable = "0" level).
- \* ( ) Indicates pin numbers for half-size package

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All specifications are subject to change without notice.

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