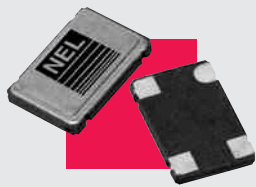


# SC-C1440 Series



## Size, mm

5 x 7

## I/O

4 pad

## Supply Voltage

3.3V / 2.5V / 1.8V / 5V

# LVC MOS

## SC-C1440 Series *Rev G*

Frequency Range: 70.0 MHz to 165.0 MHz

### Description

The **SC-C1440 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-C1440 units with a logic "1" or open enables its Pin 3 output. In the disable mode, Pin 3 presents a high impedance to the load.

### Features

- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low jitter - Wavecrest jitter characterization available
- Wide frequency range—70.0 MHz to 165.0 MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- 1.8 Volt operation
- High shock resistance, to 1000g
- High Q crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Metal lid electrically connected to ground to reduce EMI
- Gold plated pads
- RoHS Compliant, Lead Free Construction

### Creating a Part Number

#### SC - C144X - FREQ

#### Package Code

SC 4 pad 5x7 mm SMD

#### Input Voltage

Code Specification

A 3.3 V

B 2.5 V

C 1.8 V

5 V

#### Tolerance/Performance

0 ±100 ppm 0-70°C

1 ±50 ppm 0-70°C

7 ±25 ppm 0-70°C

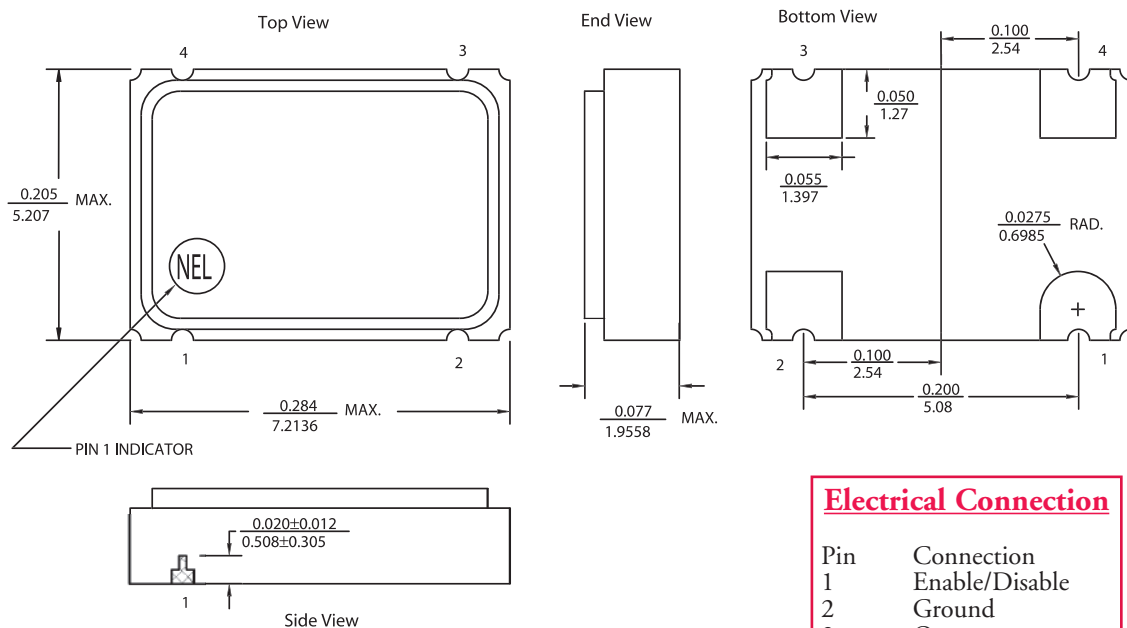
9 Customer Specific

A ±20 ppm 0-70°C

B ±50 ppm -40 to +85°C

C ±100 ppm -40 to +85°C

### Drawing Specifications



### Electrical Connection

Pin	Connection
1	Enable/Disable
2	Ground
3	Output
4	V <sub>DD</sub>

Dimensions shown in inches and millimeters.  
All tolerances are ±0.005 inches (±0.127mm) unless otherwise specified.



For the most up to date specifications on each NEL product, log on to our website—  
[www.nelfc.com](http://www.nelfc.com)

# LVCMOS

## SC-C1440 Series Rev G

Frequency Range: 70.0 MHz to 165.0 MHz

### Operating Conditions and Output Characteristics

#### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	70.0 MHz	—	165.0 MHz
Duty Cycle	—	@V <sub>DD</sub> /2	45/55%	—	55/45%
Logic 0	V <sub>OL</sub>	@600 $\mu$ A	—	—	0.2 V
Logic 1	V <sub>OH</sub>	@600 $\mu$ A	V <sub>DD</sub> -0.2 V	—	—
Rise & Fall Time	t <sub>r</sub> , t <sub>f</sub>	10-90% V <sub>O</sub>	—	—	3.5 ns
Jitter, RMS <sup>(2)</sup>	—	Overtone	—	—	3 psec
T <sub>pz</sub>	—	—	—	—	100 ns
Enable Voltage	—	—	1.3 V	—	—
Disable Voltage	—	—	—	—	0.5 V
Frequency Stability <sup>(1)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100 ppm	—	+100 ppm

#### General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage <sup>(3)</sup>	V <sub>DD</sub>	—	1.71 V	1.8 V	1.89 V
Supply Current	I <sub>DD</sub>	No Load	0.0 mA	25 mA	40 mA
Output Current	I <sub>O</sub>	Low Level Output Current	0.0 mA	—	$\pm$ 25.0 mA
Operating Temperature	T <sub>A</sub>	—	0°C	—	70°C
Storage Temperature	T <sub>S</sub>	—	-55°C	—	125°C
Power Dissipation	P <sub>D</sub>	—	—	—	76 mW
Lead Temperature	T <sub>L</sub>	Soldering, 10 sec.	—	—	300°C
Load	—	—	—	—	15 pf
Start-up Time	t <sub>s</sub>	—	—	—	10 ms

#### Environmental and Mechanical Characteristics

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-833, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55 Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1 x 10 <sup>-8</sup> atm.cc/sec of helium

#### Footnotes:

- 1) Standard frequency stability ( $\pm$ 20,  $\pm$ 25,  $\pm$ 50 ppm & others available).
- 2) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.  
RMS jitter bandwidth of 12kHz to 20MHz.
- 3) Internal high frequency power source decoupling.

#### Test Load

