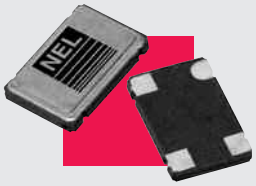
SC-C1440 Series



Size, mm
5 x 7
I/O
4 pad
Supply Voltage
3.3V / 2.5V / 1.8V / 5V

LVCMOS
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 LVCMOS 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

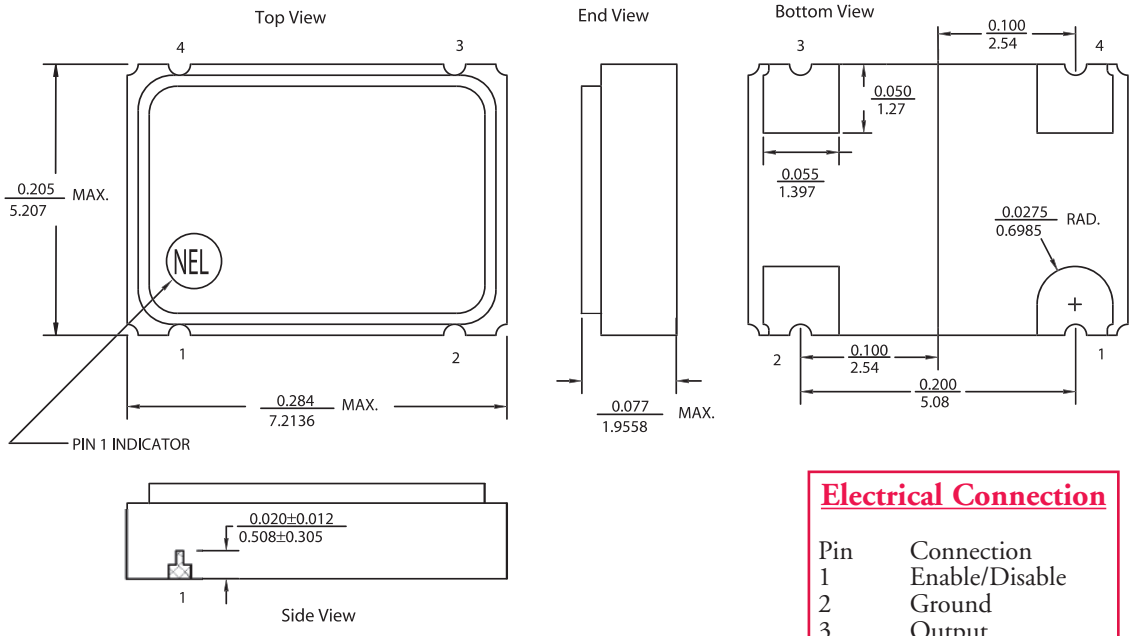
Input Voltage

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



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

Electrical Connection

Pin	Connection
1	Enable/Disable
2	Ground
3	Output
4	V_{DD}

NEL FREQUENCY CONTROLS, INC.

For the most up to date specifications on each NEL product, log on to our website—www.nelfc.com

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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_{DD}/2	45/55%	—	55/45%
Logic 0	V_{OL}	@600 µA	—	—	0.2 V
Logic 1	V_{OH}	@600 µA	V_{DD} -0.2 V	—	—
Rise & Fall Time	t_r, t_f	10-90% V_O	—	—	3.5 ns
Jitter, RMS(2)	—	Overtone	—	—	3 psec
T_{pz}	—	—	—	—	100 ns
Enable Voltage	—	—	1.3 V	—	—
Disable Voltage	—	—	—	—	0.5 V
Frequency Stability(1)	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(3)	V_{DD}	—	1.71 V	1.8 V	1.89 V
Supply Current	I_{DD}	No Load	0.0 mA	25 mA	40 mA
Output Current	I_O	Low Level Output Current	0.0 mA	—	±25.0 mA
Operating Temperature	T_A	—	0ºC	—	70ºC
Storage Temperature	T_S	—	-55ºC	—	125ºC
Power Dissipation	P_D	—	—	—	76 mW
Lead Temperature	T_L	Soldering, 10 sec.	—	—	300ºC
Load	—	—	—	—	15 pf
Start-up Time	t_S	—	—	—	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	300ºC for 10 seconds
Hermetic Seal	Leak rate less than 1 x 10^{-8} atm.cc/sec of helium

Footnotes:

1) Standard frequency stability (±20, ±25, ±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

