



LVC MOS (1.8V) SC-C1440 Series

PRELIMINARY

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.

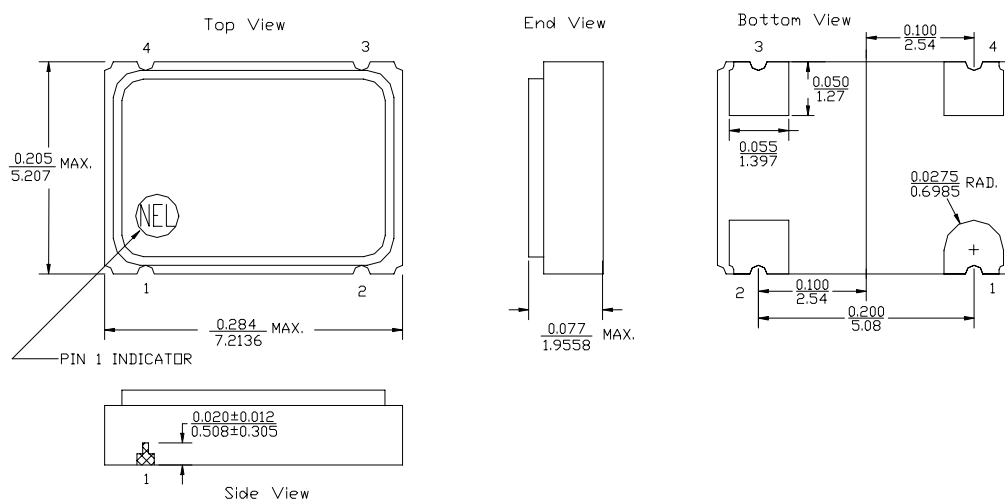
Features

- Wide frequency range—30.0MHz to 100.0MHz
- 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
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- 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

Electrical Connection

Pin Connection

1	Enable/Disable
2	Ground
3	Output
4	V _{DD}



ALL DIMENSIONS: $\frac{\text{IN}}{\text{mm}}$
All tolerances are ± 0.005 inches (± 0.127 mm) unless otherwise specified.



**FREQUENCY
CONTROLS, INC.**

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SC-C1440 Series Continued
LVCMOS

Rev. C

Operating Conditions and Output Characteristics**Electrical Characteristics**

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	30.0MHz	----	100.0MHz
Duty Cycle	----	@ $V_{DD}/2$	45/55%	----	55/45%
Logic 0	V_{OL}	@ 600 μ A	----	0.1V	0.2V
Logic 1	V_{OH}	@ 600 μ A	$V_{DD}-0.2V$	$V_{DD}-0.1V$	----
Rise & Fall Time	$t_{r,f}$	10-90% V_O	----	1.0 ns	3.5 ns
Jitter, RMS ⁽²⁾	----	Overtone	----	----	3 psec
T_{pz}	----	----	----	----	100 ns
Enable Voltage	----	----	1.3V	----	----
Disable Voltage	----	----	----	----	0.5V
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	----	+100ppm

General Characteristics

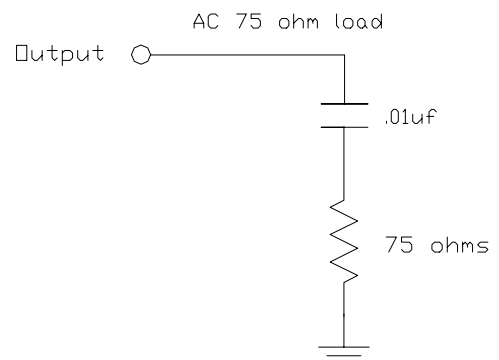
Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage ⁽³⁾	V_{DD}	----	1.71V	1.8V	1.89V
Supply Current	I_{DD}	No Load	0.0 mA	10 mA	20 mA
Output current	I_O	Low level Output Current	0.0 mA	----	± 25.0 mA
Operating temperature	T_A	----	0°C	----	70°C
Storage temperature	T_S	----	-55°C	----	125°C
Power Dissipation	P_D	----	----	----	38 mW
Lead temperature	T_L	Soldering, 10 sec.	----	----	300°C
Load	----	----	----	----	15pf
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-883, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1×10^{-8} 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.
 3) Internal high frequency power source decoupling.

Test Load:**Creating a Part Number**

SC - C144X - FREQ

Package Code

SC 4 pad 5x7mm SMD

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

Input Voltage

Code	Specification
A	3.3V
B	2.5V
C	1.8V
	5.0V

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