

## LVC MOS SC-D1420 Series

Rev. D

### Description

The **SC-D1420 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-D1420 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.

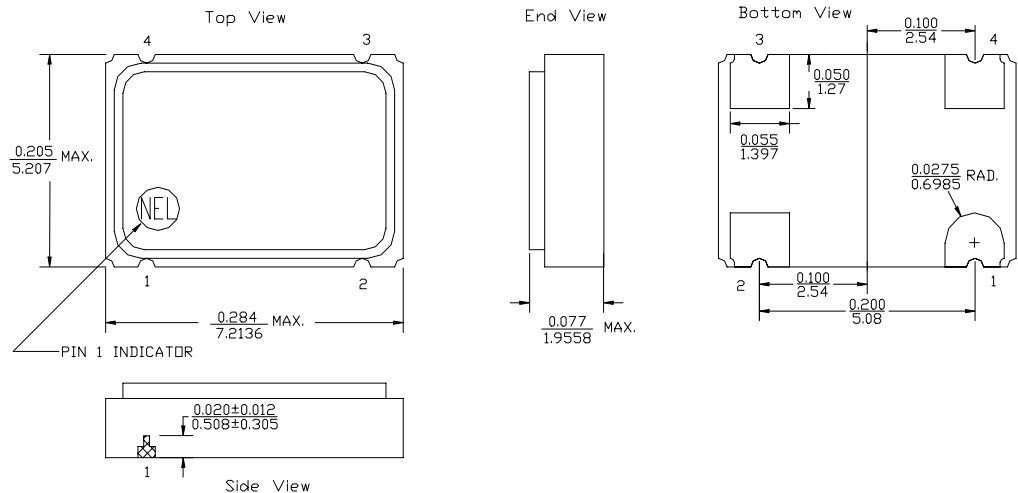
### Features

- Wide frequency range—1.0MHz to 40.0MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- 1.2 Volt operation
- High shock resistance, to 1000g
- Power supply decoupling internal
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- No internal PLL avoids cascading PLL problems
- Metal lid electrically connected to ground to reduce EMI
- Gold plated pads
- RoHS Compliant, Lead Free Construction

### Electrical Connection

Pin Connection

- |   |                 |
|---|-----------------|
| 1 | Enable/Disable  |
| 2 | Ground          |
| 3 | Output          |
| 4 | V <sub>DD</sub> |



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

SC-D1420 Series Continued  
LVCMOS

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## Operating Conditions and Output Characteristics

### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	1.0MHz	-----	40.0MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	$V_{OL}$	@ 600 $\mu$ A	-----	-----	0.2V
Logic 1	$V_{OH}$	@ 600 $\mu$ A	$V_{DD}-0.2V$	-----	-----
Rise & Fall Time	tr,tf	10-90% $V_O$	-----	-----	10.0 ns
Jitter, RMS <sup>(2)</sup>	-----	-----	-----	3 psec	-----
$T_{pz}$	-----	-----	-----	-----	25 ns
Enable Voltage	-----	-----	2.0V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.8V
Frequency Stability <sup>(1)</sup>	dF/F	Overall conditions including: voltage, calibration, temp.. 10 year aging, shock, vibration	-100ppm	-----	+100ppm

### General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage <sup>(3)</sup>	$V_{DD}$	-----	1.14V	1.2V	1.26V
Supply Current	$I_{DD}$	No Load	0.0 mA	-----	2.0 mA
Output current	$I_O$	Low level Output Current	0.0 mA	-----	$\pm 600\mu$ A
Operating temperature	$T_A$	-----	0°C	-----	70°C
Storage temperature	$T_S$	-----	-55°C	-----	125°C
Power Dissipation	$P_D$	-----	-----	-----	2.52 mW
Lead temperature	$T_L$	Soldering, 10 sec.	-----	-----	300°C
Load	-----	-----	-----	-----	6 pf
Start-up Time	$t_s$	20MHz or greater	-----	-----	10 ms
		Less than 20MHz	-----	-----	2 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 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than $1 \times 10^{-8}$ atm.cc/sec

#### Footnotes:

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

Creating a Part Number	
<b>SC -D142X - FREQ</b>	
<b>Package Code</b>	<b>Tolerance/Performance</b>
SC 4 pad 5x7mm SMD	0 $\pm 100$ ppm 0-70°C
	1 $\pm 50$ ppm 0-70°C
	7 $\pm 25$ ppm 0-70°C
	9 Customer Specific
<b>Input Voltage</b>	A $\pm 20$ ppm 0-70°C
Code Specification	B $\pm 50$ ppm -40 to +85°C
D 1.2V	C $\pm 100$ ppm -40 to +85°C