



**LVC MOS  
SC-A1420 Series**

**Description**

The **SC-A1420 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-A1420 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.

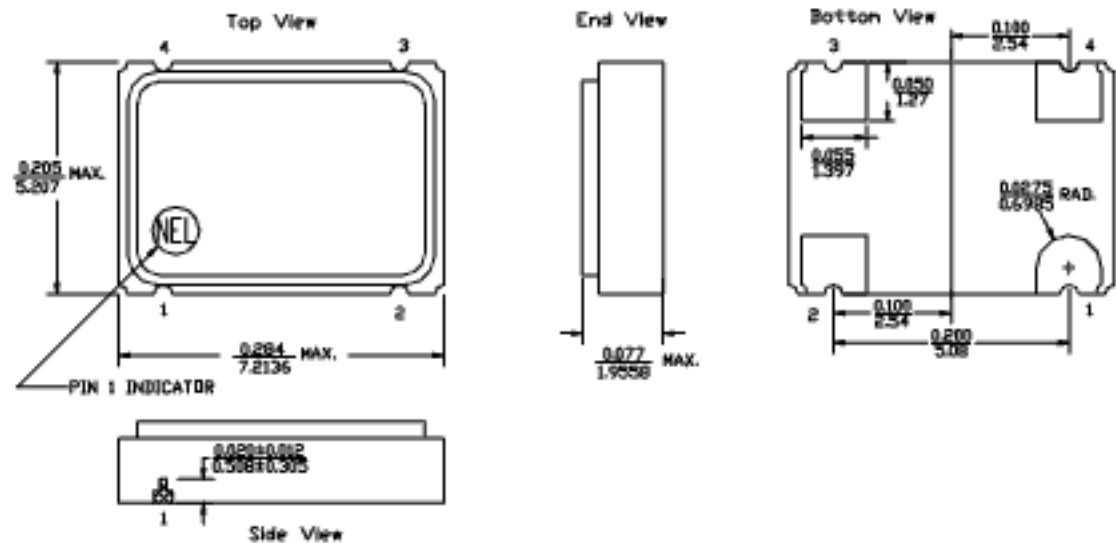
**Features**

- Wide frequency range—1.0MHz to 80.0MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- 3.3 Volt operation
- High shock resistance, to 1000g
- 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

**Electrical Connection**

Pin Connection

- 1 Enable/Disable
- 2 Ground
- 3 Output
- 4  $V_{DD}$



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

SC-A1420 Series Continued  
LVCMOS

Rev. G

## Operating Conditions and Output Characteristics

### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	1.0MHz	-----	80.0MHz
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% $V_O$	-----	-----	8.0 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>	$V_{DD}$	-----	3.00V	3.3V	3.60V
Supply Current	$I_{DD}$	No Load	0.0 mA	-----	40 mA
Output current	$I_O$	Low level Output Current	0.0 mA	-----	$\pm 16.0$ mA
Operating temperature	$T_A$	-----	0°C	-----	70°C
Storage temperature	$T_S$	-----	-55°C	-----	125°C
Power Dissipation	$P_D$	-----	-----	-----	144 mW
Lead temperature	$T_L$	Soldering, 10 sec.	-----	-----	300°C
Load	-----	-----	-----	-----	15pf
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:

- 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) External high frequency power supply decoupling required.

Creating a Part Number	
<b>SC - A142X - 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
A 3.3V	C $\pm 100$ ppm -40 to +85°C
5V	