

## LVC MOS SC-A1470 Series

Rev. B

### PRELIMINARY

#### Description

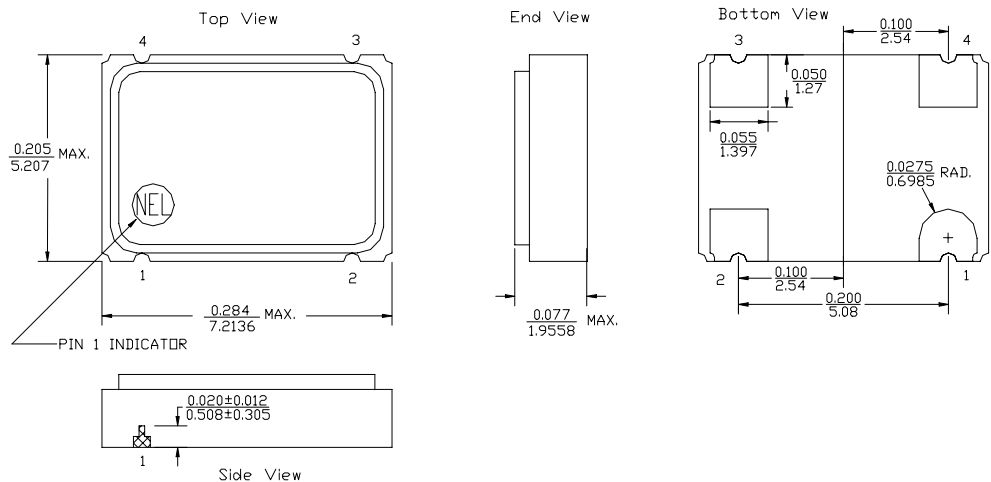
The **SC-A1470 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-A1470 units with a logic "1" or open enables its Pin 3 output. In the disable mode, Pin 3 presents a high impedance to the load.

#### Features

- Wide frequency range: 4.0MHz to 20.0MHz
- User specified tolerance  $\pm 100$ ppm
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 1000g
- Low Jitter - Wavecrest jitter characterization available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low power
- No internal PLL avoids cascading PLL problems
- Power Supply Decoupling Internal
- 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 <sub>DD</sub>



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

SC-A1470 Series Continued  
LVCMOS

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## Operating Conditions and Output Characteristics

### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	4.0MHz	----	20.0MHz
Duty Cycle	----	@ V <sub>DD</sub> /2	45/55%	----	55/45%
Logic 0	V <sub>OL</sub>	@ 600μA	----	----	0.2V
Logic 1	V <sub>OH</sub>	@ 600μA	V <sub>DD</sub> -0.2V	----	----
Rise & Fall Time	tr,tf	10-90%V <sub>O</sub>	----	----	15.0 ns
Jitter, RMS <sup>(2)</sup>	----	----	----	----	3 psec
T <sub>pz</sub>	----	----	----	----	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	V <sub>DD</sub>	----	3.135V	3.3V	3.465V
Supply Current	I <sub>DD</sub>	No Load	0.0 mA	----	5 mA
Output current	I <sub>O</sub>	Low level Output Current	0.0 mA	----	±16.0 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>	----	----	----	17 mW
Lead temperature	T <sub>L</sub>	Soldering, 10 sec.	----	----	300°C
Load	----	----	----	----	15pf
Start-up Time	t <sub>s</sub>	----	----	----	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 x 10 <sup>-8</sup> atm.cc/sec

#### Footnotes:

- 1) Standard frequency stability (±20, ±25, ±50ppm & others available)
- 2) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.

Creating a Part Number	
<b>SC - A147X - FREQ</b>	
<b>Package Code</b>	<b>Tolerance/Performance</b>
SC 4 pad 5 x 7mm SMD	0 ±100ppm 0-70°C
	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
	9 Customer Specific
<b>Input Voltage</b>	A ±20ppm 0-70°C
Code Specification	B ±50ppm -40 to +85°C
A 3.3V	C ±100ppm -40 to +85°C
5V	