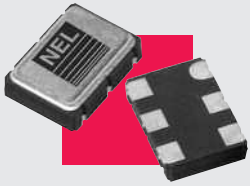


# SD-A3670 Series



**Size, mm**  
5 x 7  
**I/O**  
6 pad  
**Supply Voltage**  
3.3V

## VCXO Series (PECL) SD-A3670 Series *Rev H* Frequency Range: 70.0 MHz to 200.0 MHz

### Description

The **SD-A3670 Series** of voltage controlled quartz crystal oscillators provide frequency control by applying a voltage to Pin 1. This unit supplies DPECL compatible outputs which are enabled when Pin 2 is set to a logic low or left open.

### Features

- Wide Absolute Pull Range
- 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 200.0 MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 1000g
- 3.3 Volt operation
- Metal lid electrically connected to ground to reduce EMI
- High Q crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Gold plated pads
- RoHS Compliant, Lead Free Construction

### Creating a Part Number

#### SD - A367X - FREQ

#### Package Code

SD 6 pad 5x7 mm SMD

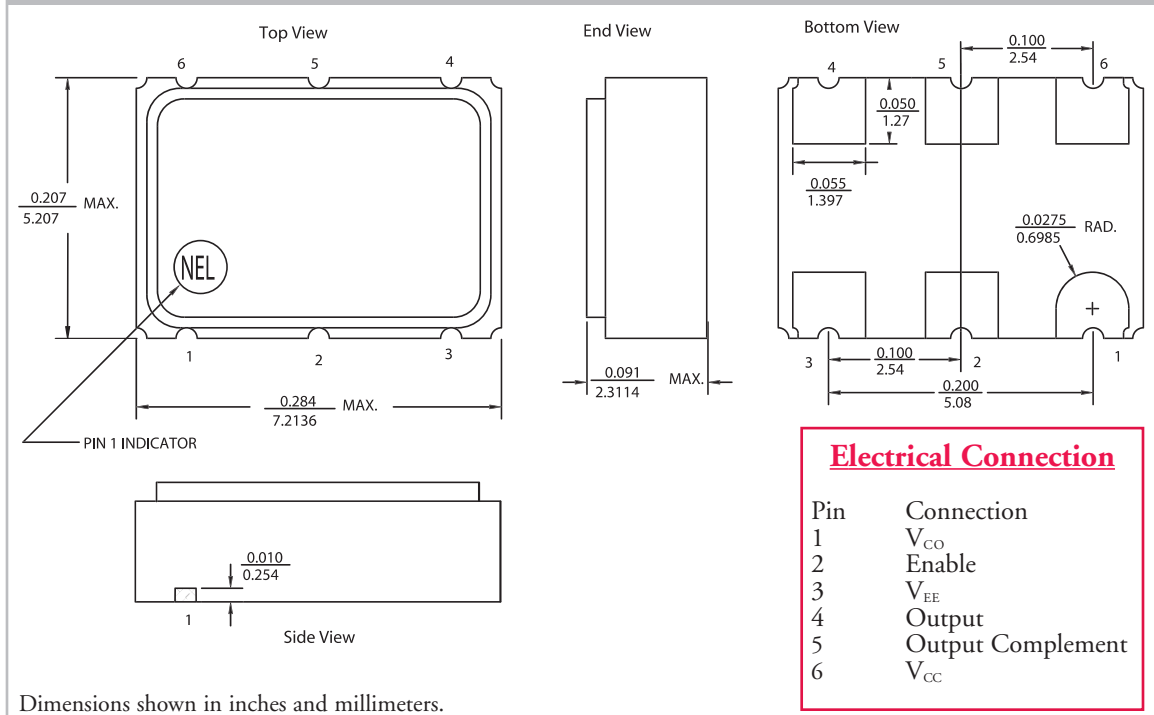
#### Input Voltage

Code Specification  
A 3.3 V

#### Tolerance/Performance

0 ±100 ppm 0-70°C  
9 Customer Specific  
C ±100 ppm -40 to +85°C

### Drawing Specifications



Dimensions shown in inches and millimeters.



For the most up to date specifications on each NEL product, log on to our website—  
[www.nelfc.com](http://www.nelfc.com)

# VCXO Series (PECL)

## SD-A3670 Series *Rev H*

Frequency Range: 70.0 MHz to 200.0 MHz

### Operating Conditions and Output Characteristics

#### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	70.0 MHz	—	200.0 MHz
Duty Cycle	—	@V <sub>o</sub> /2	45/55%	—	55/45%
Logic 0	V <sub>OL</sub>	—	V <sub>CC</sub> -1.810 V <sub>DC</sub>	—	V <sub>CC</sub> -1.620 V <sub>DC</sub>
Logic 1	V <sub>OH</sub>	—	V <sub>CC</sub> -1.200 V <sub>DC</sub>	—	V <sub>CC</sub> -0.880 V <sub>DC</sub>
Rise & Fall Time	t <sub>r</sub> , t <sub>f</sub>	20-80% V <sub>o</sub>	—	—	600 ps
Jitter, RMS <sup>(1)</sup>	—	—	—	3 psec	—
Absolute Pull Range	APR	V <sub>CO</sub> =0.3 to 3.0V	±100ppm	—	—
V <sub>CO</sub> Input Impedance	—	50 na dc current max	100K ohm	—	—
V <sub>CO</sub> Linearity	—	V <sub>CO</sub> =0.3 to 3.0V	—	—	10%
Transfer Function <sup>(2)</sup>	—	V <sub>CO</sub> =0.3 to 3.0V	—	Positive	—

#### General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V <sub>CC</sub> -V <sub>EE</sub>	Nominal	3.135 V	3.3 V	3.465 V
Supply Current	I <sub>CC</sub>	—	—	—	60 mA
Output Current	I <sub>O</sub>	—	0.0 mA	—	±50.0 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>	—	—	—	208 mW
Lead Temperature	T <sub>L</sub>	Soldering, 10 sec.	—	—	300°C
Load	50 ohm to V <sub>CC</sub> -2 V or Thevenin Equivalent, Bias Required	—	—	—	—

#### 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	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1 x 10 <sup>-8</sup> atm.cc/sec of helium

#### Footnotes:

- 1) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.  
RMS jitter bandwidth of 12kHz to 20MHz.
- 2) Frequency increase with increase in control voltage and is monotonic.