

VCXO Series (PECL)
SD-A3670 Series

PRELIMINARY

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.

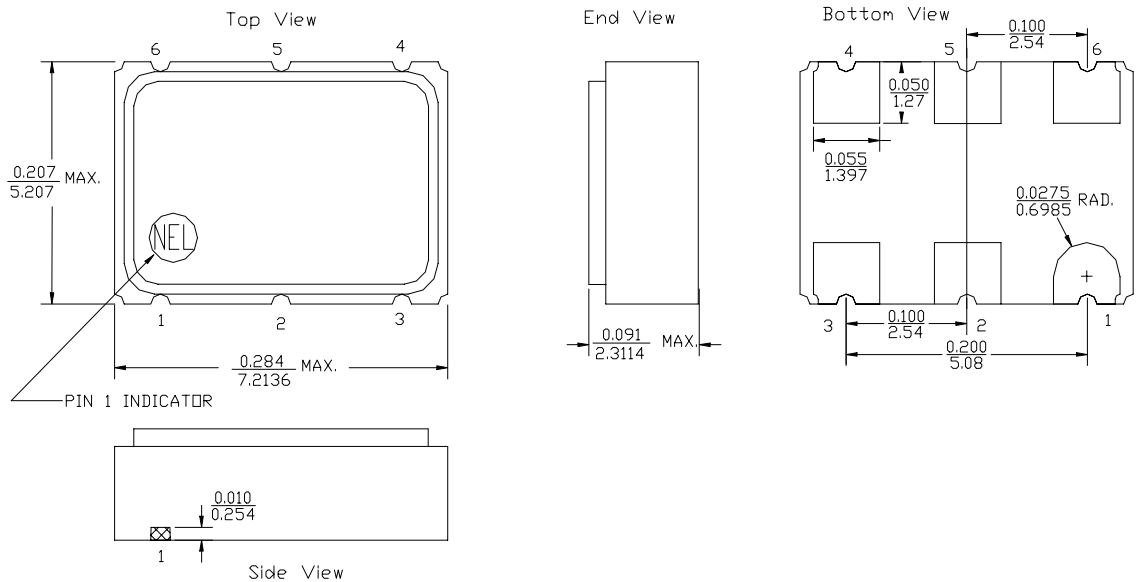
Features

- Frequency range—80.0MHz to 162.0MHz
- 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
- Low Jitter - Wavecrest jitter characterization available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- 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

Electrical Connection

Pad Connection

- | | |
|------------|----------|
| 1 | V_{CO} |
| 2 | Enable |
| 3 | V_{EE} |
| 4 | Output |
| 5 | Output |
| Complement | |
| 6 | V_{CC} |



SD-A3670 Series Continued
VCXO (PECL)

Rev. C

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	80.0MHz	-----	162.0MHz
Duty Cycle	-----	@ $V_o / 2$	45/55%	-----	55/45%
Logic 0	V_{OL}	-----	$V_{CC}-1.810V_{dc}$	-----	$V_{CC}-1.620V_{dc}$
Logic 1	V_{OH}	-----	$V_{CC}-1.200V_{dc}$	-----	$V_{CC}-0.880V_{dc}$
Rise & Fall Time	tr,tf	20-80% V_o	-----	-----	1.25 ns
Jitter, RMS ⁽²⁾	-----	-----	-----	3 psec	-----
Pullability	-----	0.3 to 3.0V	±75ppm	-----	-----
Vco input impedance	-----	50na dc current max	100K ohm	-----	-----
Vco linearity	-----	-----	-----	-----	25%
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	$V_{CC}-V_{EE}$	Nominal	3.135V	3.3V	3.465V
Supply Current	I_{CC}	-----	-----	-----	60 mA
Output current	I_o	-----	0.0 mA	-----	±50.0 mA
Operating temperature	T_A	-----	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Power Dissipation	P_D	-----	-----	-----	208 mW
Lead temperature	T_L	Soldering, 10 sec.	-----	-----	300°C
Load	50 Ohm to $V_{CC}-2V$ 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 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:

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

Creating a Part Number	
SD - A367X - FREQ	
Package Code	Tolerance/Performance
SD 6 Pad 5x7mm SMD	0 ±100ppm 0-70°C
	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
Input Voltage	9 Customer Specific
Code Specification	A ±20ppm 0-70°C
A 3.3V	B ±50ppm -40 to +85°C
5V	C ±100ppm -40 to +85°C



**FREQUENCY
CONTROLS, INC.**