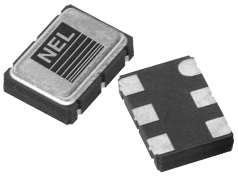
CRYSTAL CLOCK OSCILLATORS

Data Sheet 0209A

Rev. C



VCXO Series (PECL)
SD-A3670 Series

PRELIMINARY

Description

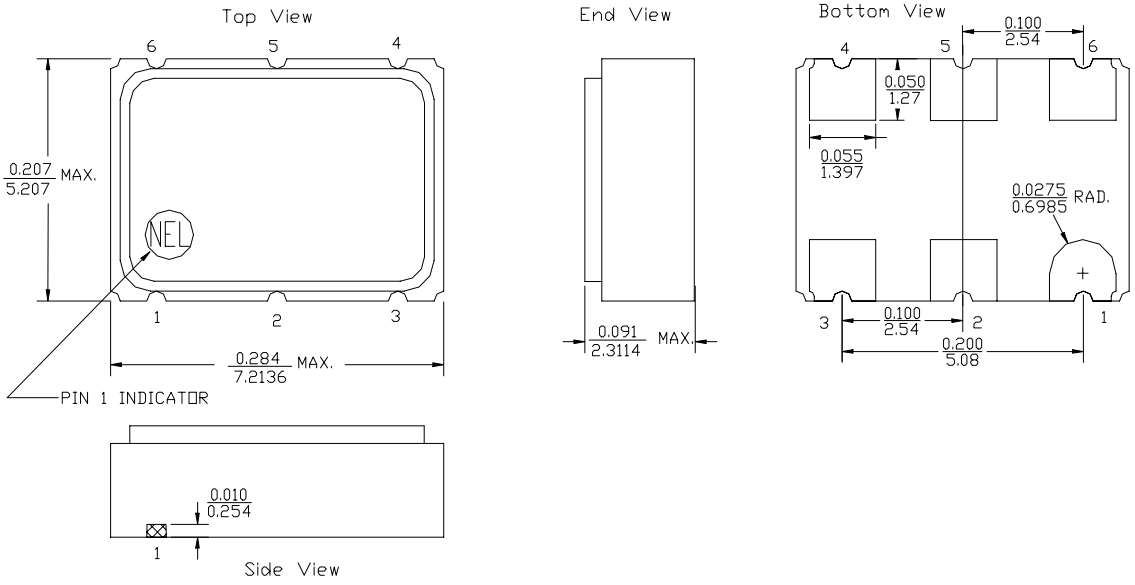
The **SD-A3670 Series** of voltage controlled quartz crystal oscillators provide frequency control by applying a voltage to Pin 1. This unit supplies DPECL compatible outputs which are enabled when Pin 2 is set to a logic low or left open.

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}



NEL FREQUENCY CONTROLS, INC.

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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}	-----	Vcc-1.810Vdc	-----	Vcc-1.620Vdc
Logic 1	V_{OH}	-----	Vcc-1.200Vdc	-----	Vcc-0.880Vdc
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 x 10^{-8} atm.cc/sec of helium

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

SD - A367X - FREQ

Package Code
SD 6 Pad 5x7mm SMD

Input Voltage

Code	Specification
A	3.3V
	5V

Tolerance/Performance

0	±100ppm 0-70°C
1	±50ppm 0-70°C
7	±25ppm 0-70°C
9	Customer Specific
A	±20ppm 0-70°C
B	±50ppm -40 to +85°C
C	±100ppm -40 to +85°C

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