

VCXO Series (PECL) PJ-A3670 Series

PRELIMINARY

Description

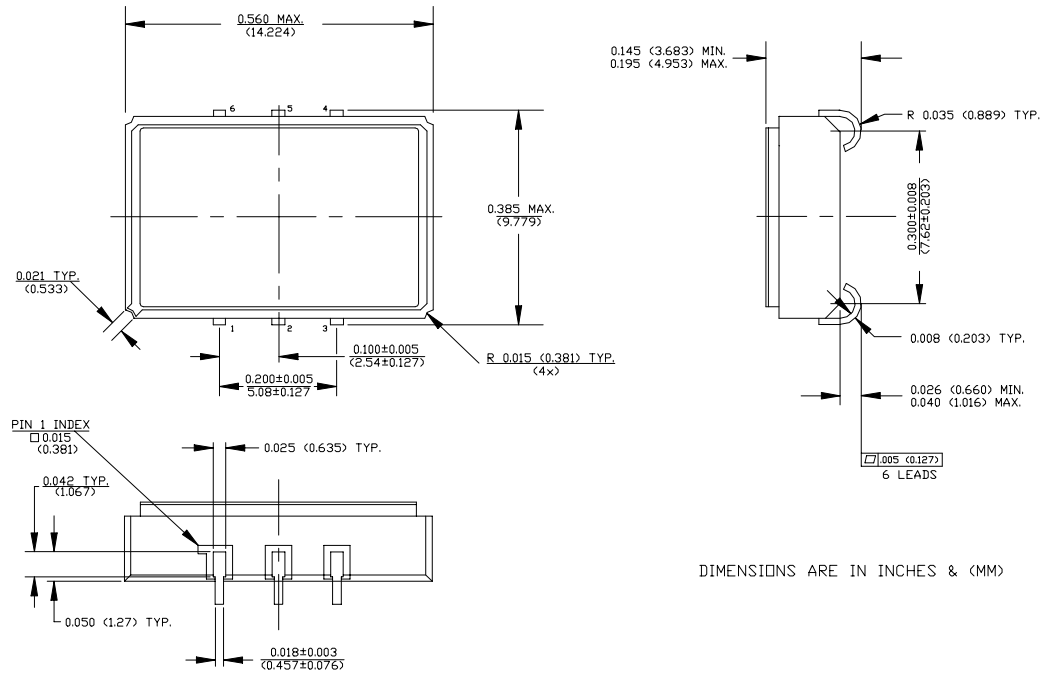
The **PJ-A3670 Series** of voltage controlled quartz crystal oscillators provide frequency control by applying a voltage to Pin 1. This unit supplies ECLiPS compatible outputs which are enabled when Pin 2 is set to a logic high or left open.

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 3000g
- 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 leads - Solder dipped leads available upon request

Electrical Connection

| Pin | Connection |
|-----|-------------------|
| 1 | V _{CO} |
| 2 | Output Enable |
| 3 | V _{EE} |
| 4 | Output |
| 5 | Output Complement |
| 6 | V _{CC} |



PJ-A3670 Series Continued
VCXO (PECL)

Rev. D

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} -1.810Vdc | ---- | V _{CC} -1.620Vdc |
| Logic 1 | V _{OH} | ---- | V _{CC} -1.200Vdc | ---- | V _{CC} -0.880Vdc |
| Rise & Fall Time | tr,tf | 20-80%V _O | ---- | ---- | 600 ps |
| Jitter, RMS ⁽²⁾ | ---- | ---- | ---- | 3 psec | ---- |
| Pullability | ---- | 0.3 to 3.0V | ±75ppm | ---- | ---- |
| V _{CO} input impedance | ---- | 50na dc current max | 100K ohm | ---- | ---- |
| V _{CO} 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} | ---- | ---- | ---- | 80 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 | ---- | ---- | ---- | 278 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 | |
|--------------------------|------------------------------|
| PJ - A367X - FREQ | |
| Package Code | Tolerance/Performance |
| PJ 6 J Lead SMD | 0 ±100ppm 0-70°C |
| | 1 ±50ppm 0-70°C |
| | 7 ±25ppm 0-70°C |
| | 9 Customer Specific |
| Input Voltage | A ±20ppm 0-70°C |
| Code Specification | B ±50ppm -40 to +85°C |
| A 3.3V | C ±100ppm -40 to +85°C |
| 5V | |



**FREQUENCY
CONTROLS, INC.**