



Low Noise Crystal Oscillators > Vibration Isolated VHF Citrine PLO

Features:

- Frequencies from 25 MHz to 160 MHz, fixed
- Standard, Premium or Golden Phase Noise
- Ruggedized for Dynamic Environments
- PLL Loop Bandwidth: 1 Hz to 100 Hz
- Low G-Sensitivity to 2E-10/g per axis
- Natural Mount Frequency: ~35 Hz, typical
- Effective G-Sensitivity to 5E-12/g (2 kHz offset)

Applications:

- Military Applications
- Airborne and Ground
- Radar Systems
- Tactical Radio
- Vehicular Communication



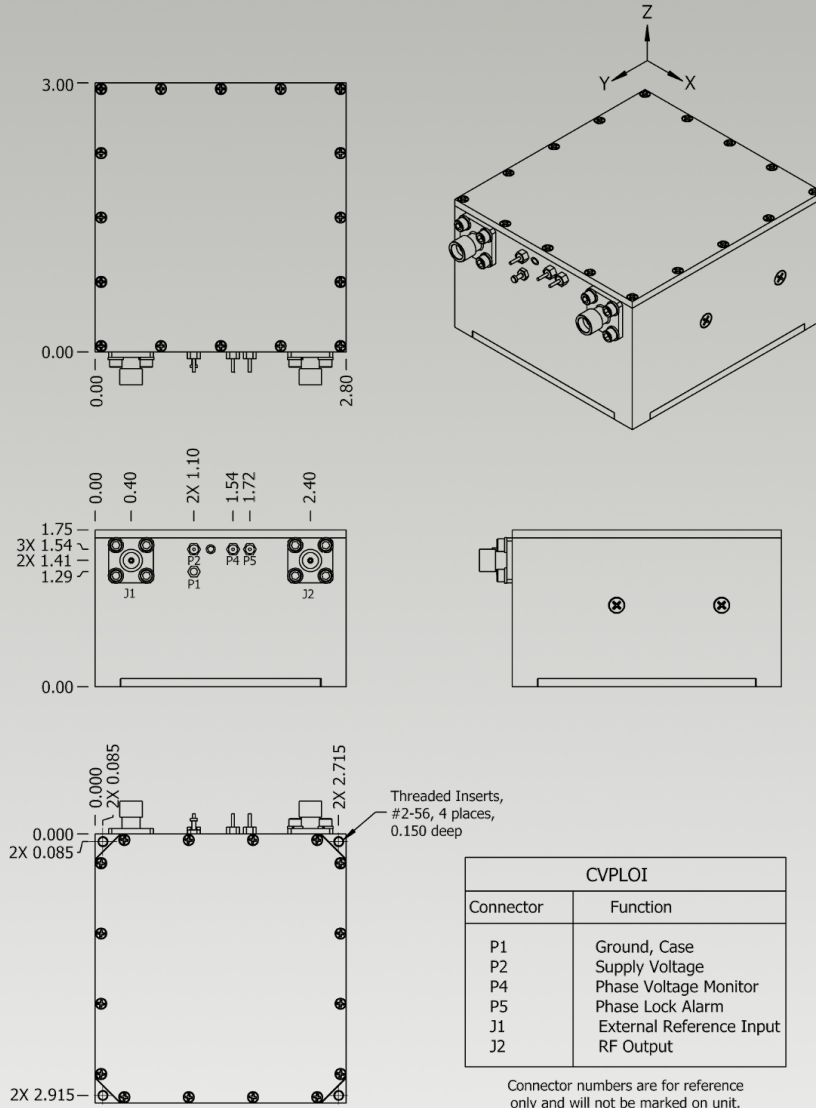
Description:

The Vibration Isolated VHF Citrine PLO is a 25 MHz to 160 MHz fixed frequency rugged OCXO integrated with a low noise phase lock loop circuit and mounted within an outer enclosure using shock mounts. The PLO offers good temperature stability (when free-running), Standard, Premium or Golden phase noise options (to -190 dBc/Hz) and low g-sensitivity (to 2E-10/g per axis). Frequency dividers are used to prescale the internal VHF oscillator and the external reference frequencies to phase lock at a common lower frequency. The PLL loop bandwidth options are typically ≤5 Hz or ≤60 Hz, but can be configured for optimal performance considering the reference signal provided. Although vibration isolation may not be a viable solution for some applications, it works well for dampening vibration beyond the natural resonant frequency of the isolated unit, typically 30 Hz to 50 Hz, and varies depending on the weight of the isolated unit and vibration profile. The Vibration Isolated VHF Citrine PLO is an ideal solution for airborne and mobile applications with random vibration requiring improved dynamic phase noise performance at offsets at and beyond 80 Hz. Effective g-sensitivity to 5E-12/g (2 kHz offset) can be realized. The nickel-plated machined aluminum outer enclosure is 3" x 2.8" x 1.75". An internal voltage regulator is provided for excellent power supply line rejection. Please consult the factory if you need any specifications to be modified to better suit your application.

Electrical Specifications	
Output Frequency (fixed; specify within range)	25 MHz to 160 MHz
Output Level	+13 dBm ±2 dB into 50 ohms
Aging	(100 MHz model, typical)
Per day after 30 days operating, typical	5 x 10 ⁻⁹
Second year, typical	5 x 10 ⁻⁷
Per year thereafter, typical	3 x 10 ⁻⁷
Temperature Stability (consult factory for other ranges)	(100 MHz model, typical)
Range E: 0 to +50°C (Ref: +25°C)	≤ ±5 x 10 ⁻⁷
Range F: -20 to +70°C (Ref: +25°C)	≤ ±1 x 10 ⁻⁶
Range G: -55 to +85°C (Ref: +25°C)	≤ ±2 x 10 ⁻⁶
Phase Noise	(Frequency Dependent: See Standard Specifications and Part Numbers table below for details)
Harmonics	≤ -30 dBc
Sub-Harmonics	≤ -80 dBc
PLL Divider Products	≤ -80 dBc
Spurious	≤ -80 dBc
PLL Loop Bandwidth	≤ 5 Hz or ≤ 60 Hz
Supply Voltage	+15 VDC or +12 VDC (±5%)
Warm-up	≤ 9 Watts for 5 minutes at +25°C
Total	≤ 6 Watts at +25°C
Crystal Type	SC-cut
Crystal Acceleration Sensitivity	5 x 10 ⁻¹⁰ /g, typical; to 2 x 10 ⁻¹⁰ /g, available
Natural Mount Resonant Frequency	~35 Hz, typical
Mechanical	
Packaging	Nickel-Plated Machined Aluminum
Dimensions	3.0" x 2.8" x 1.75"
Connectors / Mounting	SMA(f) and solder pins on side Threaded Inserts, #2-56, 4 places



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Standard Specifications and Part Numbers **

Part Number	Output Frequency * (MHz)	Typical Phase Noise (dBc/Hz), Static * (free-running)					Output Level (dBm) * into 50 ohms	Temperature Stability (Ref: +25°C) *	Supply Voltage (VDC)	Acceleration Sensitivity (g per axis) *	External Reference Frequency (MHz)	Package / Connectors	Package Size (inches)
		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz							
501-26247	50	-105	-135	-155	-169	-170	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	2.8 x 3 x 1.75
501-26248	50	-105	-135	-158	-175	-176	+13 ±2	±2E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	2.8 x 3 x 1.75
501-26230	100	-100	-130	-150	-169	-170	+13 ±2	±5E-7, 0 to +50°C	+15	3E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	2.8 x 3 x 1.75
501-26231	100	-100	-130	-158	-176	-176	+13 ±2	±5E-7, 0 to +50°C	+15	3E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	2.8 x 3 x 1.75
501-27039	100	-108	-138	-163	-183	-188	+18 ±2	±5E-7, 0 to +50°C	+15	3E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	2.8 x 3 x 1.75

* Consult factory for custom frequency, phase noise performance, output level, temperature stability and acceleration sensitivity options.

** See website for additional Standard Part Numbers and Specifications.

