

LOW NOISE CRYSTAL OSCILLATORS > VHF ONYX IV

FEATURES:

- 25 MHz to 160 MHz
- Ruggedized/Low Cost/High Performance
- Low Phase Noise to -180 dBc/Hz
- Guaranteed G-Sensitivity to $2E-10/g$
- Thru Hole PCB Mount
- Internal Voltage Regulator
- Lightweight < 30 grams

APPLICATIONS:

- Military Applications
- Airborne, Ground, Shipboard
- Test Equipment
- Synthesizers
- Base Stations
- Portable Transceivers



DESCRIPTION:

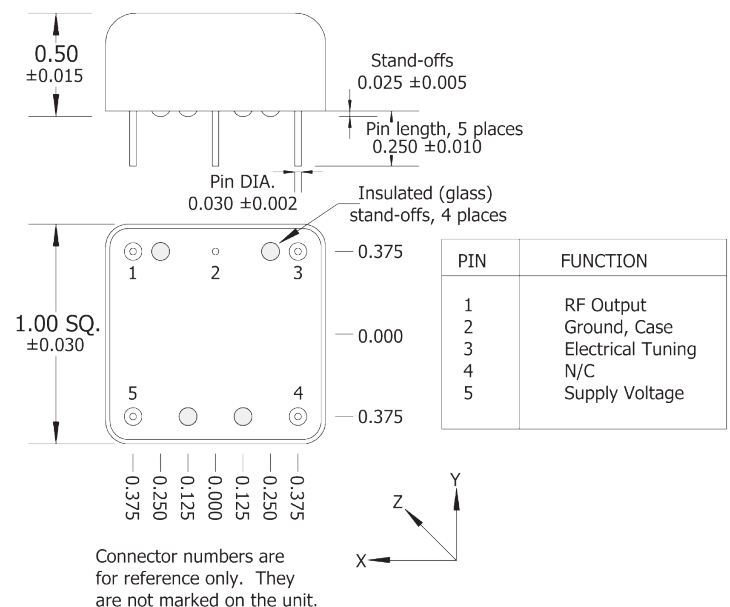
The VHF ONYX IV is a small, lightweight, ruggedized OCXO featuring low phase noise, good temperature stability and low g-sensitivity (to $2E-10/g$ per axis). Designed for commercial and military PCB mount applications, it provides excellent phase noise performance during vibration. The nickel-plated steel package is 1" x 1" x 0.5". An internal voltage regulator is provided for excellent power supply line rejection. Please consult the factory to discuss custom specification modifications which may 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)	5 x 10 ⁻⁹ per day after 30 days operating, typical	
	5 x 10 ⁻⁷ second year, typical	
	3 x 10 ⁻⁷ per year thereafter, typical	
Temperature Stability (consult factory for other ranges)	(100 MHz model, typical)	
	Range E: 0 to +50°C (Ref: +25°C)	$\leq \pm 2 \times 10^{-7}$
	Range F: -20 to +70°C (Ref: +25°C)	$\leq \pm 5 \times 10^{-7}$
	Range G: -55 to +85°C (Ref: +25°C)	$\leq \pm 2 \times 10^{-6}$
Phase Noise	(Frequency Dependent: See Standard Specifications and Part Numbers table below for details)	
Harmonics	≤ -30 dBc	
Spurious	≤ -80 dBc	
Tuning (MT and ET ranges can be reversed upon request)	-Mechanical Tuning	$\geq \pm 4 \times 10^{-6}$, typical
	-Electronic Tuning Tuning A: 0 to ± 10 VDC	$\geq \pm 5 \times 10^{-7}$, typical
	Tuning B: ± 5 VDC	$\geq \pm 5 \times 10^{-7}$, typical
	Slope: Negative	(Positive Slope available on some ET only models)
Supply Voltage	+15 VDC or +12 VDC ($\pm 5\%$)	
Warm-up Power	≤ 6 Watts for 5 minutes at +25°C	
Total Power	≤ 3 Watts at +25°C	
Crystal Type	SC-cut	
Acceleration Sensitivity	$\leq 5 \times 10^{-10}/g$, typical to $\leq 2 \times 10^{-10}/g$, available	

Mechanical

Packaging	Solder sealed steel can
Dimensions	1" x 1" x 0.5"
Connectors/Mounting	Solder pins on base Thru Hole PCB mount





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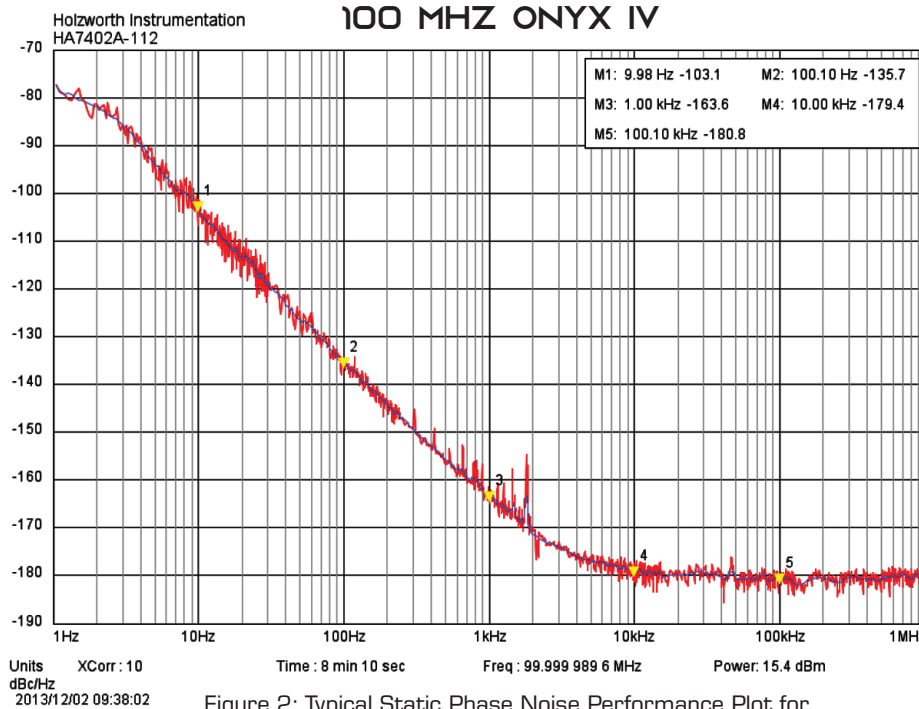


Figure 2: Typical Static Phase Noise Performance Plot for the 100 MHz ONYX IV, P/N: 501-31725-11

Electrical Specifications

Part Number	Output Frequency* (MHz)	Typical Phase Noise (dBc/Hz), Static*					Output Level (dBm, into 50 ohms)*	Temperature Stability (Ref: +25°C)*	Supply Voltage (VDC)*	Acceleration Sensitivity (g per axis)*	Package/Connectors	Package Size (Inches)
		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz						
501-24762-01	100 MHz	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, typ	Solder Pins on Base	1x1x0.5
501-24762-02	100 MHz	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, gtd	Solder Pins on Base	1x1x0.5
501-24762-03	100 MHz	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	2E-10, gtd	Solder Pins on Base	1x1x0.5
501-31724-01	100 MHz	-100	-130	-156	-173	-175	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1x1x0.5
501-31724-02	100 MHz	-100	-130	-156	-173	-175	+10 ±2	±5E-7, -20 to +70°C	+12	5E-10, typ	Solder Pins on Base	1x1x0.5
501-31724-11	100 MHz	-105	-135	-158	-176	-180	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1x1x0.5
501-31724-12	100 MHz	-105	-135	-158	-176	-180	+10 ±2	±5E-7, -20 to +70°C	+12	5E-10, typ	Solder Pins on Base	1x1x0.5
501-31725-01	100 MHz	-100	-130	-156	-173	-175	+10 ±2	±2E-7, 0 to +50°C	+12	3E-10, typ	Solder Pins on Base	1x1x0.5
501-31725-11	100 MHz	-105	-135	-158	-176	-180	+10 ±2	±2E-7, 0 to +50°C	+12	3E-10, typ	Solder Pins on Base	1x1x0.5
501-31725-42	100 MHz	-100	-130	-156	-173	-175	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, gtd	Solder Pins on Base	1x1x0.5
501-31725-52	100 MHz	-105	-135	-158	-176	-180	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, gtd	Solder Pins on Base	1x1x0.5
501-31725-82	100 MHz	-100	-130	-156	-173	-175	+10 ±2	±5E-7, -20 to +70°C	+12	2E-10, gtd	Solder Pins on Base	1x1x0.5
501-31725-92	100 MHz	-105	-135	-158	-176	-180	+10 ±2	±5E-7, -20 to +70°C	+12	2E-10, gtd	Solder Pins on Base	1x1x0.5

*Consult factory for custom frequency, phase noise performance, g-sensitivity, output level, temperature stability and supply voltage options.

** See website for additional Standard Part Numbers and Specifications