



Low Noise Crystal Oscillators > VHF ONYX IV

Features:

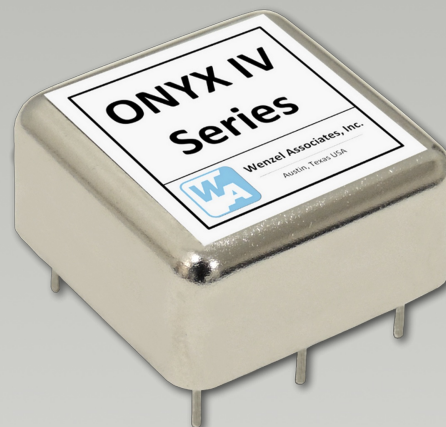
- Frequency: 25 MHz to 160 MHz, fixed
- Rugged/Low Cost/High Performance
- Low Phase Noise to -176 dBc/Hz
- Low G-Sensitivity to 2E-10/g per axis
- Thru Hole PCB Mount
- Internal Voltage Regulator

Applications:

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

Description:

The VHF ONYX IV is a small lightweight rugged OCXO featuring low phase noise, good temperature stability and low acceleration 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 contact technical staff to discuss custom requirements.

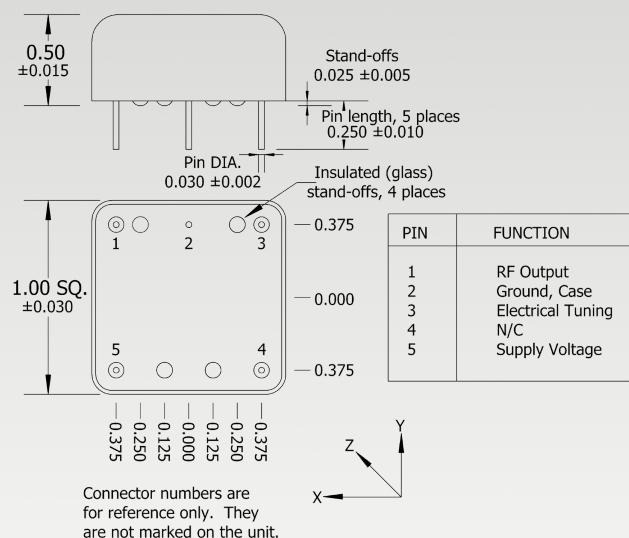


Electrical Specifications

Output Frequency (fixed; specify within range)	25 MHz to 160 MHz
Output Level	+13 dBm $\pm$ 2 dB into 50 ohms
Aging	(100 MHz model, typical)
Per day after 30 days operating, typical	5×10^{-9}
Second year, typical	5×10^{-7}
Per year thereafter, typical	3×10^{-7}
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)	$\leq \pm 1.5 \times 10^{-6}$
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	$\geq \pm 7 \times 10^{-6}$, typical
- Electrical Tuning	$\geq \pm 5 \times 10^{-7}$, typical
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	≤ 3 Watts for 5 minutes at +25°C
Total	≤ 1.5 Watts at +25°C
Crystal Type	SC-cut
Acceleration Sensitivity	5×10^{-10} /g, typical; to 2×10^{-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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100 MHz ONYX IV

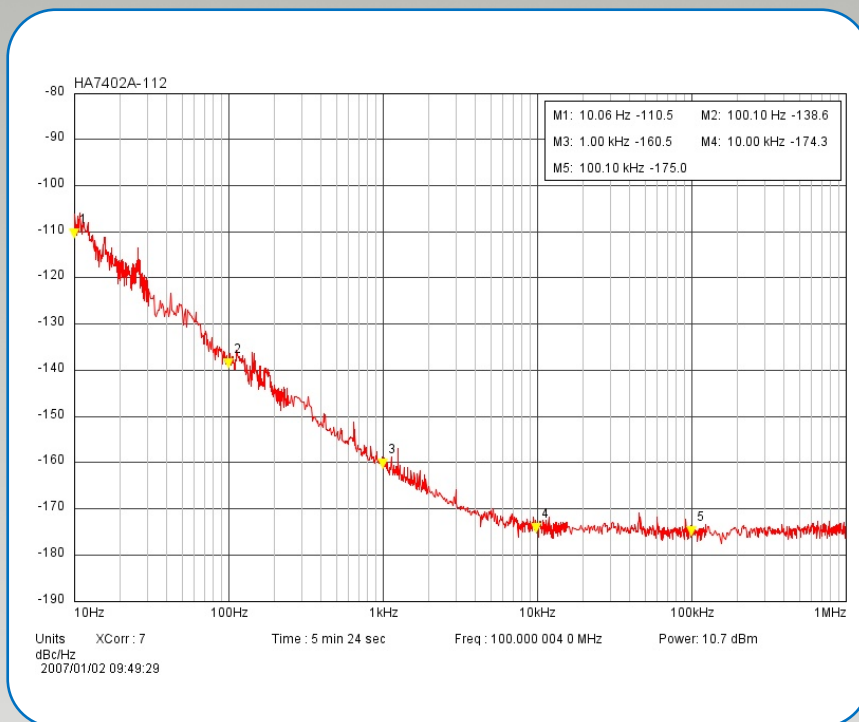


Figure 1: Typical Phase Noise Performance Plot for the 100 MHz ONYX IV, P/N: 501-24760-04

Standard Specifications and Part Numbers **

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						
501-27228-01	50	-90	-120	-145	-165	-165	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-27228-02	50	-95	-125	-150	-168	-168	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-27228-03	50	-99	-130	-155	-170	-170	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-27829-01	80	-90	-120	-145	-165	-165	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-27829-02	80	-95	-125	-150	-168	-168	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-27829-03	80	-99	-130	-155	-170	-171	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24760-01	100	-90	-120	-145	-165	-165	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24760-02	100	-95	-125	-150	-168	-168	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24760-03	100	-99	-130	-155	-170	-171	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24760-04	100	-104	-135	-156	-172	-172	+10 ±2	±2E-7, 0 to +50°C	+12	5E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24761-01	100	-90	-122	-140	-160	-165	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24761-02	100	-90	-122	-140	-160	-165	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, gtd	Solder Pins on Base	1 x 1 x 0.5
501-24761-03	100	-90	-122	-140	-160	-165	+10 ±2	±5E-7, -20 to +70°C	+12	2E-10, gtd	Solder Pins on Base	1 x 1 x 0.5
501-24762-01	100	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, typ	Solder Pins on Base	1 x 1 x 0.5
501-24762-02	100	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	3E-10, gtd	Solder Pins on Base	1 x 1 x 0.5
501-24762-03	100	-95	-127	-152	-165	-172	+10 ±2	±5E-7, -20 to +70°C	+12	2E-10, gtd	Solder Pins on Base	1 x 1 x 0.5

* 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.

