

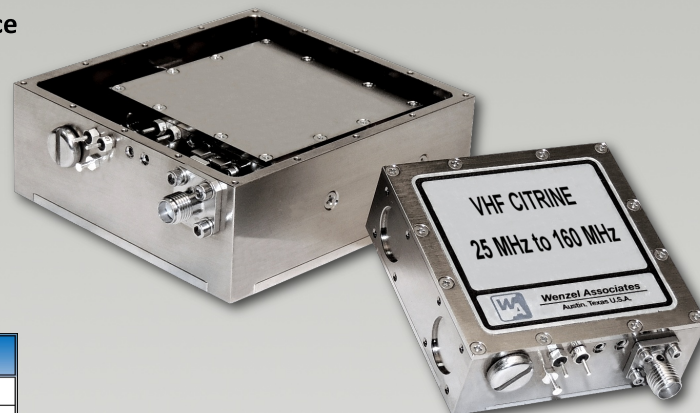


Low Noise Crystal Oscillators > VHF Citrine

Features:

- Frequencies from 25 MHz to 160 MHz, fixed
- Standard, Premium or Golden Phase Noise
- Ruggedized for Dynamic Environments
- Low G-Sensitivity to 2E-10/g per axis
- Good Temperature Stability
- Vibration Isolated Version Available
- Military Applications
- Airborne, Ground, Shipboard
- Radar Systems
- Tacticle Radio
- Vehicular Communication
- Reference Source

Applications:



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)	$\leq \pm 2 \times 10^{-6}$
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
- 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	≤ 6 Watts for 5 minutes at +25°C
Total	≤ 3 Watts at +25°C
Crystal Type	SC-cut
Acceleration Sensitivity	5×10^{-10} /g, typical; to 2×10^{-10} /g, available

Mechanical

Packaging	Nickel-Plated Machined Aluminum
Dimensions	2" x 2" x 0.7"
Connectors / Mounting	- Package A SMA(f) and solder pins on side Threaded Inserts, #2-56, 4 places
	- Package B SMA(f) x2 and solder pins on side Threaded Inserts, #2-56, 4 places

Description:

The VHF Citrine is a 25 MHz to 160 MHz fixed frequency rugged OCXO featuring Standard, Premium or Golden phase noise options (to -190 dBc/Hz), good temperature stability and low g-sensitivity (to 2E-10/g per axis). Designed for demanding applications, the VHF Citrine provides excellent phase noise performance under vibration with both hard-mount and a vibration isolated version available. The hard-mount nickel-plated machined aluminum package is 2" x 2" x 0.7" with single and dual output options. A low noise internal voltage regulator is included, which provides excellent power supply line rejection. Please consult the factory to discuss any custom specification modifications which may better suit your application.





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100 MHz Golden Citrine

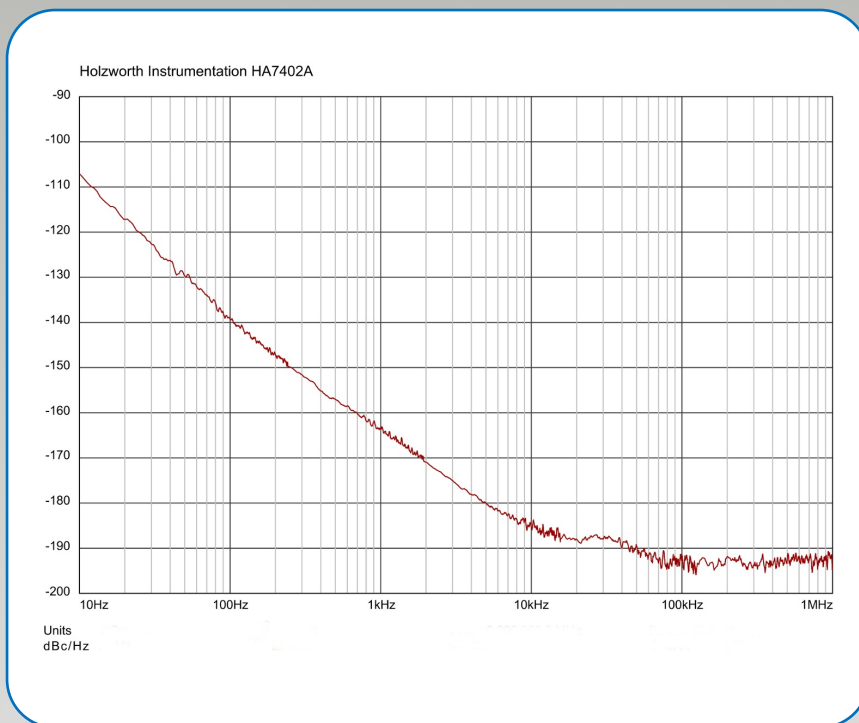


Figure 1: Typical Phase Noise Performance Plot for the 100 MHz Golden Citrine, P/N: 501-25900 Rev.B

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						
501-24069	100	-100	-130	-158	-176	-176	+13 ±2	±2E-7, 0 to +50°C	+12	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-24825	100	-100	-130	-158	-176	-176	+13 ±2	±2E-7, 0 to +50°C	+15	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-24977	100	-100	-130	-150	-168	-170	+13 ±2	±5E-7, 0 to +50°C	+15	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-24978	100	-100	-130	-150	-168	-170	+13 ±2	±5E-7, 0 to +50°C	+12	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-25056	100	-95	-125	-155	-176	-176	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-25247	100, dual	-100	-130	-158	-176	-176	+10 ±2	±5E-7, -40 to +70°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-25900	100	-108	-138	-163	-183	-188	+18 ±2	±2E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26198	80	-105	-135	-162	-183	-188	+18 ±2	±2E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26237	125	-100	-130	-160	-183	-188	+18 ±2	±2E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26249	50	-105	-135	-155	-169	-170	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26250	50	-105	-135	-158	-175	-176	+13 ±2	±2E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26527	80	-102	-132	-160	-176	-176	+13 ±2	±2E-7, 0 to +50°C	+15	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26862	80	-100	-130	-150	-168	-170	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26863	125	-95	-125	-150	-168	-170	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26864	160	-88	-118	-148	-168	-170	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7
501-26866	100, dual	-100	-130	-158	-176	-176	+10 ±2	±2E-7, -40 to +70°C	+15	3E-10, typ	SMA(f) & Pins on Side	2 x 2 x 0.7

* 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.



Crystal Oscillators

• **RF Modules**

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OCXO

VHF Citrine

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Package A

Technical drawings of Package A, showing dimensions in inches.

Top View: A square footprint with a side length of 2.00 inches. The center features a Frequency Adjust Access Screw and a J1 connector. Dimensions from the left edge: 0.00 to the screw center, 0.35 to the J1 center, 2X 0.72 to the next hole, 0.91 to the next hole, and 1.59 to the right edge.

Isometric View: Shows the 3D structure of the package with various connectors and mounting points.

Side View (Left): Shows the profile of the package. Dimensions from the bottom: 0.00 to the base, 0.30 to the first step, 0.48 to the second step, 0.70 to the top. The top width is 2X 0.53, and the bottom width is 0.40.

Side View (Right): Shows the profile of the package. Dimensions from the left: 0.00 to the base, 4X 0.35 to the first hole, 2X 0.42 to the next hole, and 2X 1.59 to the right edge. The top width is 16 X 0.060-80 Tapped holes for shock mounts.

Bottom View: A square footprint with a side length of 2X 1.915 inches. The center features a J1 connector and 4X 2-56 Threaded Inserts. Dimensions from the left edge: 0.000 to the J1 center, 2X 0.085 to the next hole, and 2X 1.915 to the right edge.

CV-1A	
Connector	Function
P1	Ground, Case
P2	Supply Voltage
P3	Electrical Tuning
J1	RF Output

Connector numbers are for reference only.

CV-1A	
Connector	Function
P1	Ground, Case
P2	Supply Voltage
P3	Electrical Tuning
J1	RF Output

Connector numbers are for reference only and will not be marked on unit.

Package B

Technical drawings of Package B, showing top, side, and bottom views, and a connector pinout table.

Top View: A square layout with dimensions 2.00 on all sides. The bottom edge features a series of pins and components, including a "Frequency Adjust Access Screw" and two large rectangular components labeled J1 and J2.

Side View: A perspective view showing the package's profile. It includes a coordinate system with X, Y, and Z axes. The package has a rectangular base with rounded corners and a series of pins and components along the bottom edge.

Bottom View: A square layout with dimensions 2.00 on all sides. It shows the underside of the package, including the "Frequency Adjust Access Screw" and two large rectangular components labeled J1 and J2. The bottom edge features a series of pins and components, including a "Frequency Adjust Access Screw" and two large rectangular components labeled J1 and J2.

Connector Pinout Table:

CV-2A	
Connector	Function
P1	Ground, Case
P2	Supply Voltage
P3	Electrical Tuning
J1	RF Output A
J2	RF Output B

Connector numbers are for reference only and will not be marked on unit.

CV-2A	
Connector	Function
P1	Ground, Case
P2	Supply Voltage
P3	Electrical Tuning
J1	RF Output A
J2	RF Output B

Connector numbers are for reference only and will not be marked on unit.



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