

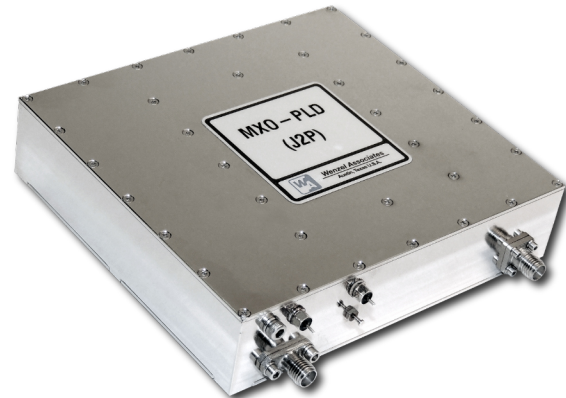
## LOW NOISE CRYSTAL OSCILLATORS > MXO (PLO W. DIVIDERS)

### FEATURES:

- PLO with Integrated Multipliers
- Frequency Dividers Used When Phase Locking
- Frequencies from 200 MHz to 12 GHz, fixed
- Ultra Low Phase Noise Performance
- Excellent Spectral Purity
- Easily Customized to Specific Frequency

### APPLICATIONS:

- Military Applications
- Radar Systems
- Test Equipment
- Instruments
- Reference Source

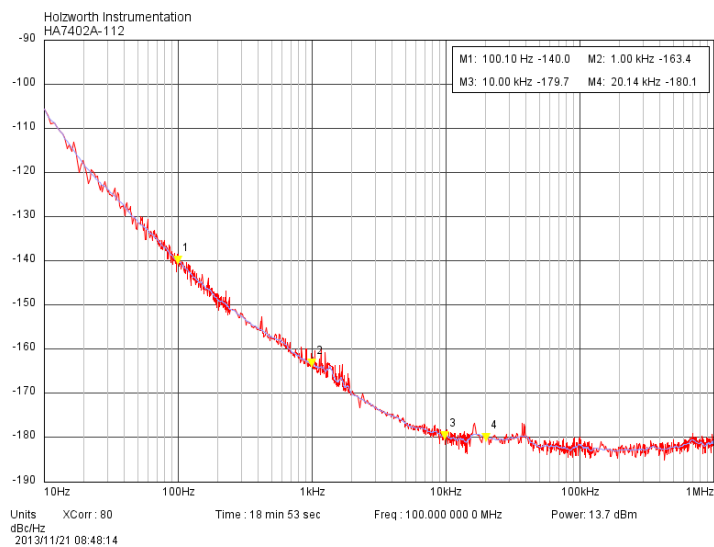


### DESCRIPTION:

The HF Citrine is a 10 MHz to 25 MHz fixed frequency rugged OCXO featuring Standard or Premium phase noise options, excellent aging and temperature stability and low g-sensitivity (to 1E-10/g per axis). Designed for demanding application, the HF 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 blah blah.

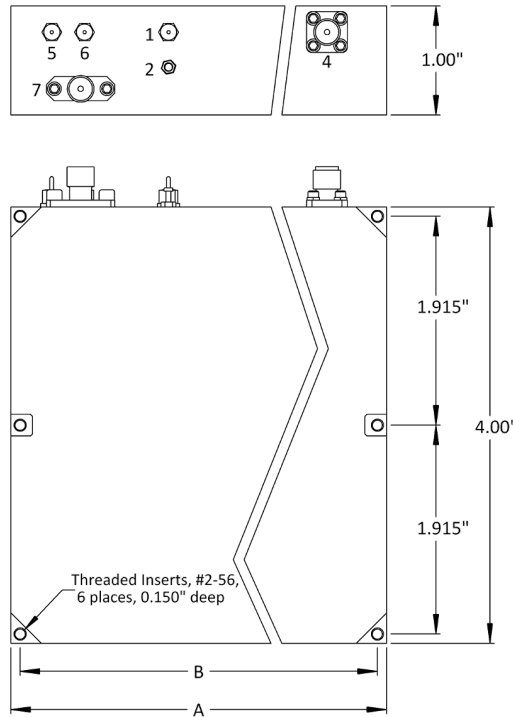
Electrical Specifications	
Output Frequency (fixed; specify within range)	<b>200 MHz to 12 GHz</b>
Output Level	+13 dBm ±2 dB into 50 ohms
External Reference Input Frequency	10 MHz (standard; other options available)
External Reference Input Level	+7 dBm ±6 dB into 50 ohms
Aging	
Per day after 30 days operating, typical	$5 \times 10^{-9}$
Second year, typical	$5 \times 10^{-7}$
Per year thereafter, typical	$3 \times 10^{-7}$
Temperature Stability (consult factory for other ranges)	
Range E: 0 to +50°C (Ref: +25°C)	$\leq \pm 5 \times 10^{-7}$
Range F: -20 to +70°C (Ref: +25°C)	$\leq \pm 1 \times 10^{-6}$
Phase Noise	(Frequency Dependent: See Std. Specifications and Part Numbers table below for details)
Harmonics	$\leq -25$ dBc
Sub-Harmonics	$\leq -60$ dBc
PLL & Divider Products	$\leq -60$ dBc
Spurious	$\leq -80$ dBc
PLL Loop Bandwidth	$\leq 10$ Hz, typical
Supply Voltage	+15 VDC or +12 VDC (±5%)
Warm-up	$\leq 9$ to 19 Watts for 5 minutes at +25°C
Total	$\leq 6$ to 16 Watts at +25°C
Crystal Type	SC-cut
Crystal Acceleration Sensitivity	$5 \times 10^{-10}$ /g, typical; to $2 \times 10^{-10}$ /g, available
Mechanical	
Packaging	Nickel-Plated Machined Aluminum
Dimensions	See Mechanical Drawing
Connectors / Mounting	SMA(f) and solder pins on side Threaded Inserts, #2-56, 6 places

Multiplied Crystal Oscillator Plots (MXO)  
100 MHz - (free running)





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**MXO-PLD**

Package	Dimension A	Dimension B
J1P	3.45"	3.275"
J2P	4.40"	4.230"
J3P	5.36"	5.185"

Connector	Function
1	Supply Voltage
2	Ground, Case
4	RF Output
5	Phase Lock Voltage
6	Phase Lock Alarm
7	External Reference Input

**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							
501-21935	200	-93	-123	-151	-167	-168	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-25382	300	-89	-119	-147	-163	-164	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-25386	400	-87	-117	-144	-160	-161	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-23950	500	-85	-115	-143	-159	-160	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-25388	512	-74	-104	-134	-159	-160	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-25392	640	-82	-112	-137	-153	-154	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	4.4 x 4 x 1
501-21081	1000	-77	-109	-136	-153	-154	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1
501-24798	1280	-76	-106	-131	-148	-149	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	4.40 x 4 x 1
501-25403	5120	-63	-93	-118	-135	-136	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	5.36 x 4 x 1
501-24230	10000	-57	-87	-113	-131	-132	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	5.36 x 4 x 1
501-25413	10240	-57	-87	-112	-129	-130	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	5.36 x 4 x 1
501-24245	12000	-55	-85	-111	-126	-127	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	5.36 x 4 x 1
501-25477	1000/500/100	-77	-109	-136	-153	-154	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	4.40 x 4 x 1
501-25475	500/100	-85	-115	-143	-159	-160	+13 ±2	±5E-7, 0 to +50°C	+15	5E-10, typ	10, LBW≤10 Hz	SMA(f) & Pins on Side	3.45 x 4 x 1

\* 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.