

LOW NOISE CRYSTAL OSCILLATORS > VHF BOOTSTRAP II

FEATURES:

- Frequencies from 25 MHz to 256 MHz, fixed
- Ruggedized for Dynamic Environments
- Ultra Low Phase Noise
- Effective G-Sensitivity to $\geq 2E-11/g$ per axis
- Externally Vibration Isolated Version Available with Effective G-Sensitivity to $2E-12/g$ (2kHz)

APPLICATIONS:

- Military Applications
- Airborne, Ground, Shipboard
- Radar Systems
- Tactical Radio
- Vehicular Communication



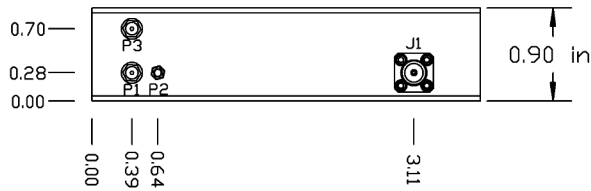
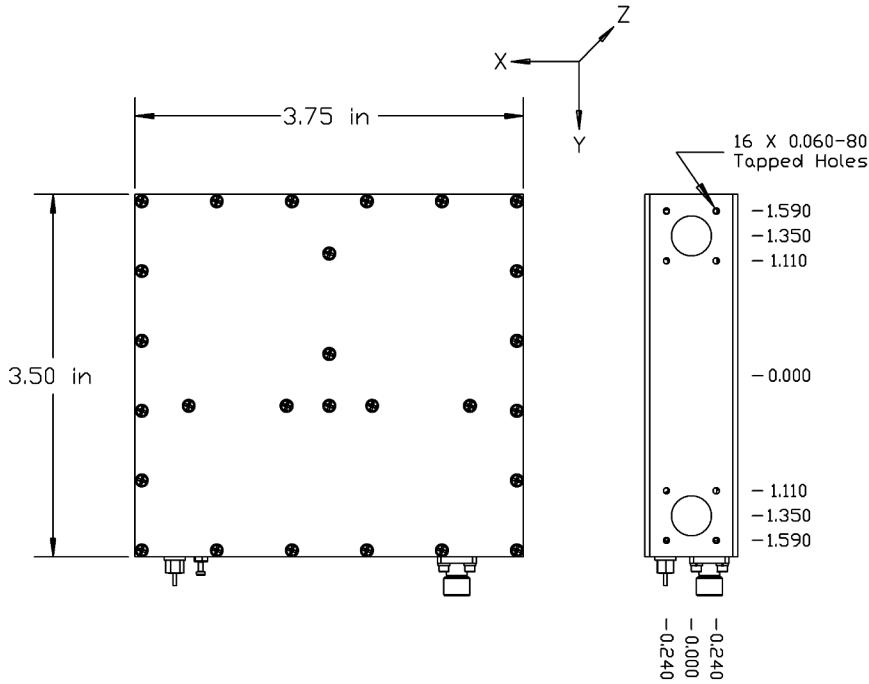
Electrical Specifications		
Output Frequency (fixed; specify within range)	25 MHz to 256 MHz	
Output Level	+13 dBm ± 2 dB into 50 ohms	
Aging	(100 MHz model, typical)	
	Per day after 30 days operating, typical	5×10^{-9}
	Second year, typical	5×10^{-7}
	Per year thereafter, typical	3×10^{-7}
Temperature 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 Std Specification and Part Numbers table below for details)	
Harmonics	≤ -30 dBc	
Sub-Harmonics	N/A	
PLL Products (Phase Lock models only)	≤ -60 dBc	
Spurious	≤ -80 dBc	
Natural Mount Resonant Frequency	~ 30 Hz (Vibe Iso Model Only)	
Tuning		
	-Electrical Tuning	
	Tuning A: 0 to +10 VDC Tuning B: ± 5 VDC Slope: Positive	$\geq \pm 1.5 \times 10^{-6}$, typical $\geq \pm 1.5 \times 10^{-6}$, typical
Supply Voltage	+15 VDC $\pm 5\%$ or +12 VDC $\pm 5\%$	
Warm-up	≤ 10 Watts for 5 minutes at +25°C	
Total	≤ 7 Watts at +25°C	
Crystal Type	SC-cut	
Acceleration Sensitivity	Effective G-Sensitivity to $2 \times 10^{-11}/g$ at offsets from 5 Hz to ~ 500 Hz Effective G-Sensitivity to $2 \times 10^{-12}/g$, isolated	
Mechanical		
Packaging	Nickel Plated Machined Aluminum Case (Standard) or Nickel Plated Steel Case (for EMI and/or Vibe Iso)	
Dimensions	3.75 x 3.5 x 0.9"	
Weight	≤ 0.5 lbs (aluminum case) ≤ 2 lbs (steel case)	
Connectors / Mounting	- Package A SMA(I) and Solder Pins on side Threaded Inserts, #2-56, 0.150" deep, 8 places	

DESCRIPTION:

At VHF frequencies, the Bootstrap oscillator provides unprecedented low-g sensitivity to $2E-11/g$. The standard Bootstrap oscillator consists of two rugged OCXOs of the same frequency between 25 MHz and 128 MHz, and all necessary components to phase lock the two oscillators together. Special compensation techniques are used to minimize vibration induced phase noise including positioning the two oscillators mechanically in two axes to offset vibration sensitivity as well as adjusting the electrical tuning of both oscillators with a properly scaled compensation voltage. The Bootstrap oscillator assembly is an ideal solution for the most demanding airborne, mobile and shipboard applications requiring greatly improved dynamic phase noise performance with effective acceleration sensitivity performance approaching $2E-11/g$ per axis. Effective acceleration sensitivity to $2E-12/g$ can be realized with the addition of an external vibration isolation system, assuming a typical natural mount resonant frequency around ~ 30 Hz. The assembly is housed in a 3.75" x 3.5" x 0.9" machined aluminum case. 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.



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Connector	Function
P1	Supply Voltage
P2	Ground, Case
P3	Electrical Tuning
J1	RF Output

