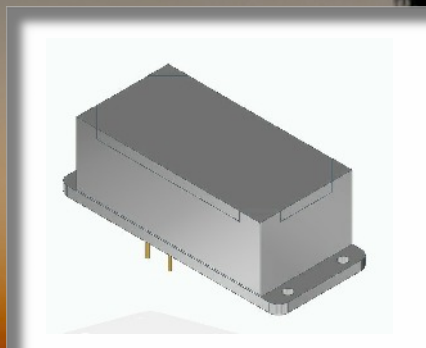


Poseidon 3 – LP G-Compensated OCXO



FEATURES

0.050 PPB/G acceleration sensitivity
-125 dBc/Hz phase noise @ 10Hz
low power OCXO
ruggedized packaging
35 Hz shear mode isolation
85 Hz axial mode isolation

#blileytakesyoufurther

LP G-Compensated OCXO

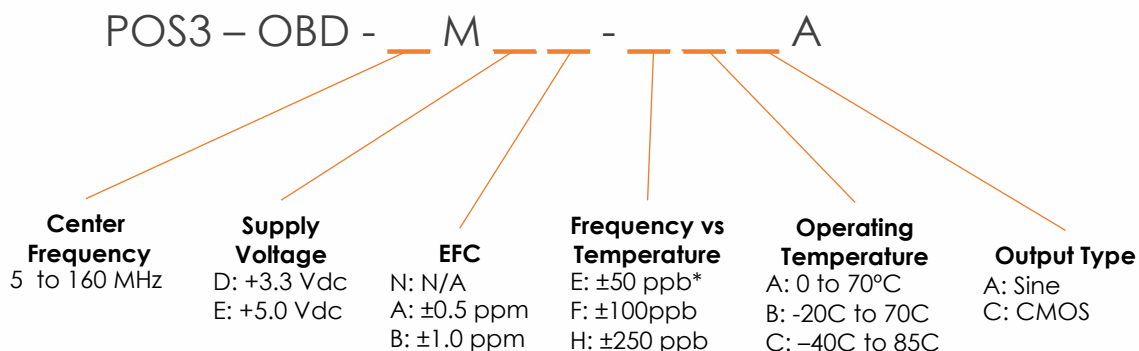
Description

The Poseidon Series is specifically designed for high vibration environments where low power dynamic phase noise performance is paramount. The active compensation and passive isolation provide up to 100x improvement in acceleration sensitivity over standard oscillators.

Block Diagram



Part Number Configuration



NOTE

* Frequency < 50 MHz

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REV 2 2020

Performance Specifications

Parameter	Conditions	Values			Unit
Input Characteristics		MIN	TYP	MAX	
Frequency Range		5	10	130	MHz
Initial Tolerance	@ +25°C±1°C			±100	ppb
Warm Up Time	To initial tolerance			1	Min
Frequency Stability					
vs. Temperature	See Options (Max) Referenced to +25°C	±50, ±100, ±250			ppb
vs. Load	± 10% Δ in Load	±5.0			ppb
vs. Supply Voltage	± 5% Δ in supply	±5.0			ppb
ADEV (Short Term Stability)	T = 1 second	5E-11			
Aging	After 30 Days Operation				
Per Day	MIL-PRF-55310	±1.0			ppb
1 st Year	MIL-PRF-55310	±100			ppb
Supply Voltage	Option D	3.13	3.3	3.46	Vdc
	Option E	4.75	5	5.25	Vdc
Power Dissipation					
Start-up	Tested at 25°C	500			mW
Steady-state	Tested at 25°C	350			mW
Electronic Frequency Control					
Voltage Range		0	Vdd/2	Vdd	Vdc
Frequency Range	See Options (Min)	±0.5, ±1			ppm
Slope		positive			
Input Impedance		100			kΩ
Linearity		10			%

Note: Values typical of 10 MHz units

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Performance Specifications

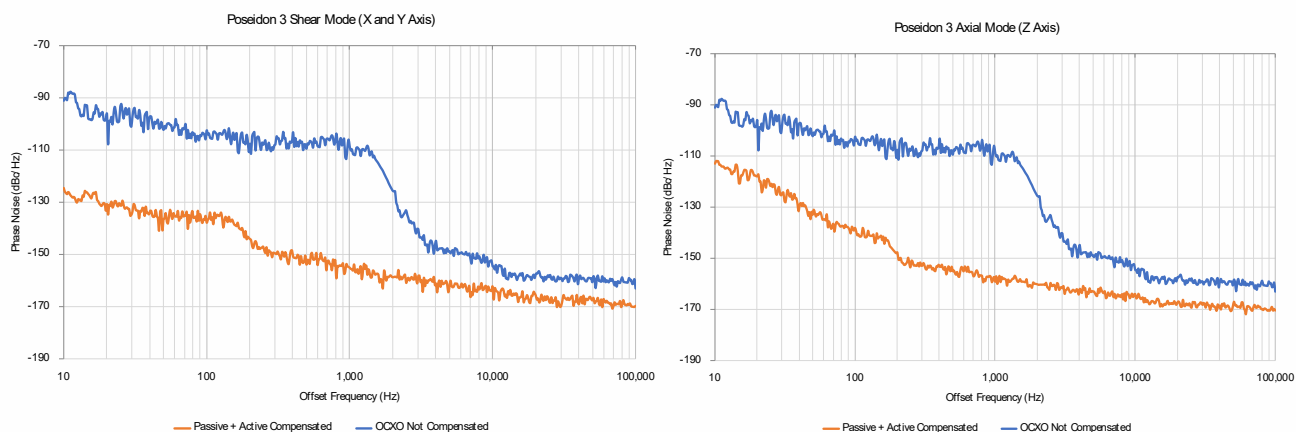
Parameter	Conditions	Values			Unit
Output Characteristics (CMOS)		MIN	TYP	MAX	
High Output Level	Logic "1"	2.7			Vdc
Low Output Level	Logic "0"			0.3	Vdc
Rise/Fall Time			10		nSec
Duty Cycle		45	50	55	%
Load			15		pF
Output Characteristics (Sinusoidal)		MIN	TYP	MAX	
Output Level		7	9	11	dBm
Harmonics				-30	dBc
Load Impedance		47.5	50.0	52.5	Ω

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Performance Specifications

Parameter	Conditions	Values	Unit
Dynamic Phase Noise		TYP	
Phase Noise (10 MHz)		Tested at 25C	
	10Hz	-125	dBc/Hz
	100Hz	-145	dBc/Hz
	1000Hz	-155	dBc/Hz
	10kHz	-165	dBc/Hz
	100kHz	-165	dBc/Hz

Estimated dynamic phase noise performance (10 MHz)



Vibration profile:
DO-160 Curve C (Random Vibration)

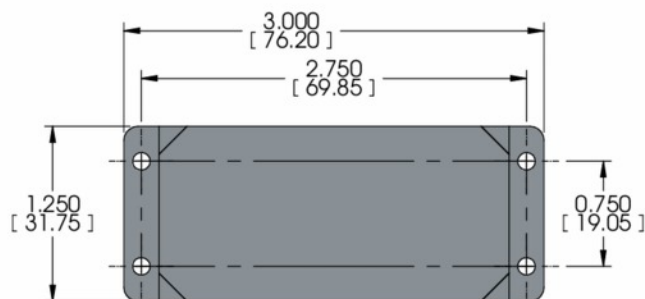
Environmental Compliance

Parameter	Conditions	Values			Unit
Environmental & Reliability		MIN	TYP	MAX	
Operating Temperature	Option A	0		70	°C
	Option B	-20		70	°C
	Option C	-40		85	°C
Storage Temperature		-55°C		95	°C
Shock	MIL-STD-202 Method 213, Test Condition A	Survive			
Sinusoidal Vibration	MIL-STD-202 Method 204, Test Condition B	Survive			
Random Vibration	RTCA DO-160	Survive			
MTBF	Calculated using MIL-HDBK-217	153,300			Hrs
Acceleration Compensation 3 axis Performance	10 MHz output Vibration profile: 0.001G2/Hz 10Hz to 2kHz		0.050		ppb/g

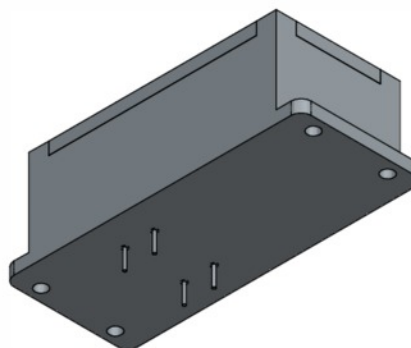
Note: Values typical of 10 MHz units

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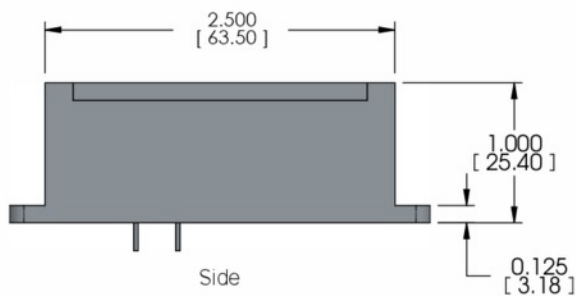
Physical Specifications



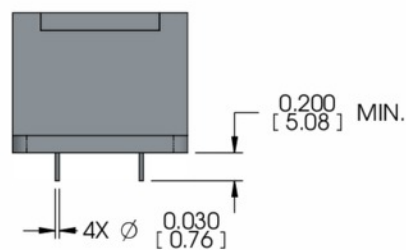
Top



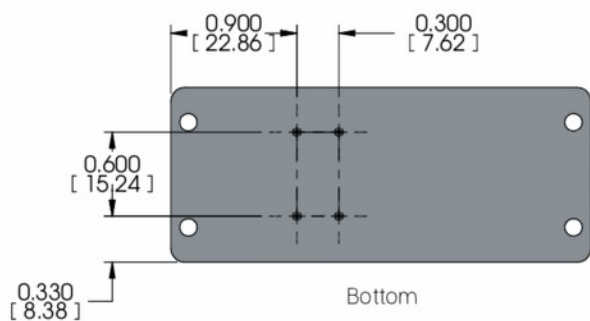
Iso Bottom



Side



End



Bottom

PIN	FUNCTION
1	RF Output
2	EFC
3	+Vdc
4	RF & Case Ground

Tolerances (mm) .X = ± 0.5 , .XX = ± 0.2 unless otherwise specified



Notes:
• None

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