

Poseidon 2i – G-Compensated OCXO



FEATURES

- ✓ 0.035 PPB/G acceleration sensitivity
- ✓ -118 dBc/Hz phase noise @ 10Hz
- ✓ commercial grade performance
- ✓ ruggedized packaging
- ✓ 35 Hz shear mode isolation
- ✓ 85 Hz axial mode isolation

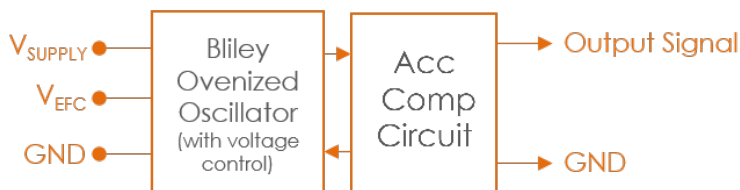
#blileytakesyoufurther

G-Compensated OCXO

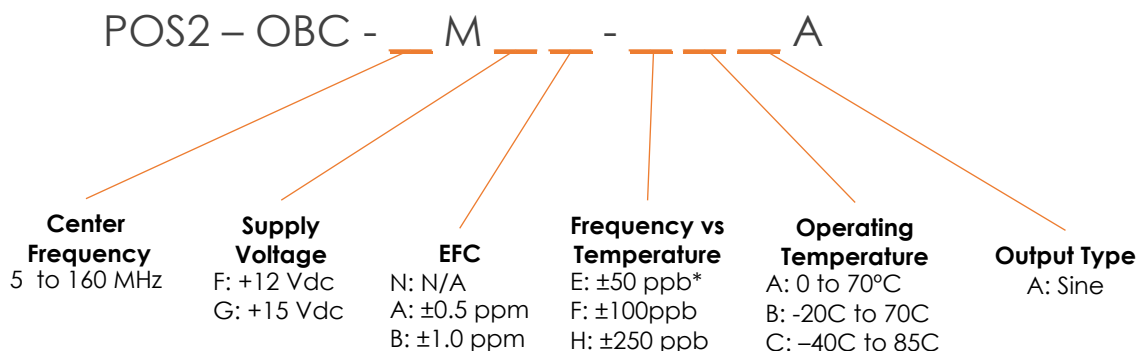
Description

The Poseidon Series is specifically designed for high vibration environments where commercial grade dynamic PHN performance is needed. The active compensation and passive isolation provide up to 50x improvement in acceleration sensitivity over standard oscillators.

Block Diagram



Part Number Configuration



NOTE

* Frequency < 50 MHz

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REV 4 2020

Performance Specifications

Parameter	Conditions	Values			Unit
Input Characteristics		MIN	TYP	MAX	
Frequency Range		5	10	130	MHz
Initial Tolerance	@ +25°C±1°C			±0.25	ppm
Warm Up Time	To initial tolerance			5	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-12			
Aging	After 30 Days Operation				
Per Day	MIL-PRF-55310	±1.0			ppb
1 st Year	MIL-PRF-55310	±100			ppb
Supply Voltage	Option F	11.4	12	12.6	Vdc
	Option G	14.25	15	15.75	Vdc
Power Dissipation					
Start-up	Tested at 25°C	7.0			W
Steady-state	Tested at 25°C	2.5			W
Electronic Frequency Control					
Voltage Range		0	2.5	5	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 (Sinusoidal)		MIN	TYP	MAX	
Output Level			13.0		dBm
Harmonics				-30	dBc
Load Impedance		45	50	55	Ω
VSWR	Into 50 Ω		2:1		

Parameter	Conditions	Values			Unit
Dynamic Phase Noise			TYP		
Phase Noise (10 MHz)	Tested at 25C				
	10Hz		-118		dBc/Hz
	100Hz		-125		dBc/Hz
	1000Hz		-158		dBc/Hz
	10kHz		-162		dBc/Hz
	100kHz		-162		dBc/Hz

Estimated dynamic phase noise performance (10 MHz)



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

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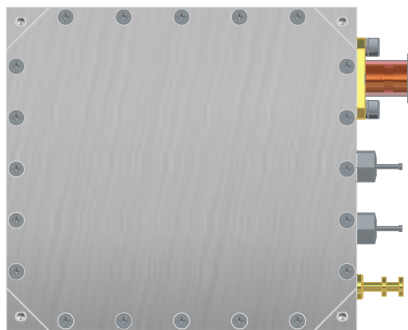
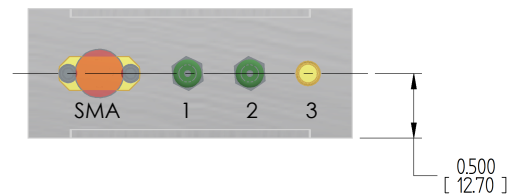
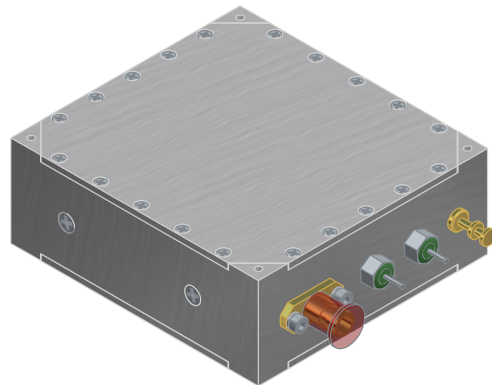
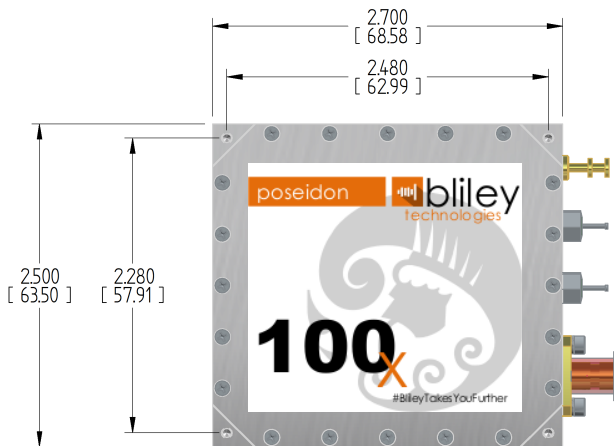
Environmental Compliance

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		0.035		ppb/g

Note: Values typical of 10 MHz units

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Physical Specifications



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

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



Notes:

- None

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