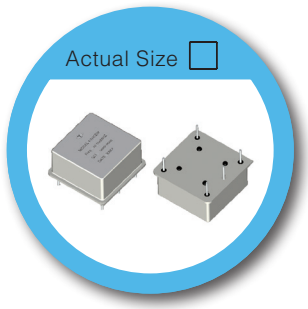
10MHz Low Noise/ Low G-Sensitivity OCXO NA-10M-6800 series



RoHS Compliant

FEATURE

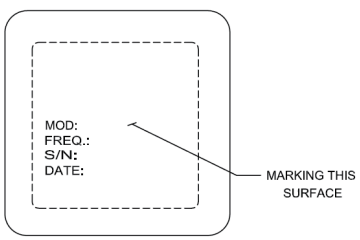
- Low Phase Noise
- Small Hermetically Sealed Package
- Tight Frequency Stability
- Low Power Consumption
- Fast Warm-up Time
- Electrical Frequency Tuning Input
- Reference Voltage Output
- RoHS-Compliant (lead-free)

TYPICAL APPLICATION

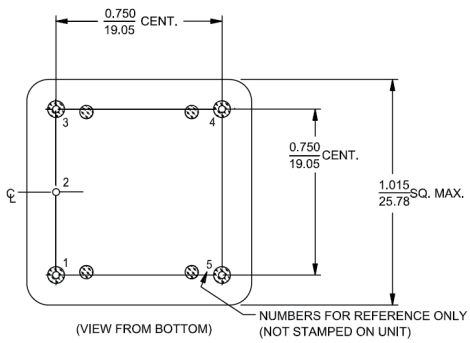
- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Test & Measurement
- Telecom Systems
- Radar Systems

DIMENSION (mm)

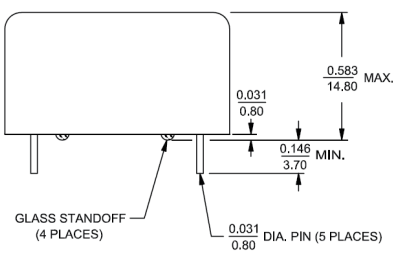
[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



PIN CONNECTIONS	
PIN	FUNCTION
1	R. F. OUTPUT
2	0 VOLTS & CASE
3 (See Note 1)	VCO INPUT or NOT CONNECTED
4 (See Note 1)	REFERENCE VOLTAGE or NOT CONNECTED
5	+VDC

Note 1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is NOT internally CONNECTED.

Note: not all combination of options are available. Other specifications may be available upon request.

ELECTRICAL SPECIFICATION

Test conditions: VDC = +12 V; VCO = +5 V; at +25 ± 3°C unless otherwise identified

OUTPUT (PIN = "R.F. OUTPUT")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Frequency (Fo)		10.000000		MHz	
Initial Accuracy	-0.1		+0.1	ppm	@ +25 ±1°C after turn on power 60 minutes Vco=+5V
Waveform		Sine wave			
Level	+8			dBm	
Load		50		Ω	
Harmonics			-30	dBc	
Spurious			-80	dBc	10Hz to 1MHz from carrier

FREQUENCY STABILITY

Parameter	Min.	Typ.	Max.	Unit	Test Condition	
Ambient	±5, ±10, ±20, ±30, ±50, ±100			ppb	referred to 25°C	**Refer to Table 1 : Ordering Information**
	-20°C ~ +70°C -40°C ~ +85°C			°C		
Aging						
Daily	-0.5		+0.5	ppb	after 30 days	
Yearly	-50		+50	ppb		
10 Years	-0.3		+0.3	ppm		
Voltage	-1		+1	ppb	±5% change	
Short term		0.002		ppb	root Allan variance for τ=1 sec	
Load	-1		+1	ppb	±5% change	
Warm-up	-50		+50	ppb	in 5 minutes @ +25 ±1°C	referred to 1 hour
G-Sensitivity (each axis)			1	ppb/g	**Option, Refer to Table 1 : Ordering Information**	

Phase Noise (Max.)	Option A	Option B	Option C	Option D		Refer to Table 1 : Ordering Information
	-105	-110	-115	-118	dBc/Hz	@ 1Hz
	-135	-140	-142	-146	dBc/Hz	@ 10Hz
	-155	-155	-155	-160	dBc/Hz	@ 100Hz
	-165	-165	-165	-166	dBc/Hz	@ 1KHz
	-170	-170	-170	-169	dBc/Hz	@ 10KHz
	-170	-170	-170	-170	dBc/Hz	@ 100KHz
	-170	-170	-170	-170	dBc/Hz	@ 1MHz

ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Tuning Range	±0.4*			ppm	Referenced to frequency at nominal Center Voltage
Control Voltage	0.5		+9.5	V	
Slope		Positive			
Center Voltage		+5.0		V	
Linearity	-10		+10	%	

*** Sufficient to adjust the oscillator to nominal frequency for 10 years. Some unit will have ±0.7ppm tuning range.**

Note: not all combination of options are available. Other specifications may be available upon request.

Specifications subject to change without notice.

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XO-0123
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INPUT POWER (PIN = "+VDC")

Parameter	Min.	Typ.	Max.	Unit	Test Condition	
Voltage	+11.4	+12	+12.6	V		
Current						
Steady State			2.0	W	@ +25°C, operating -20°C ~ +70°C	Refer to Table 1 : Ordering Information
			2.3		@ +25°C, operating -40°C ~ +85°C	
During Warm-Up			400	mA	@ +25°C, operating -20°C ~ +70°C	
			500		@ +25°C, operating -40°C ~ +85°C	

REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE")

Parameter	Min.	Typ.	Max.	Units	Test Condition
Voltage	+9.25	+9.5	+9.75	V	
Source Resistance			100	Ohm	
Load Impedance	10			Kohm	

ENVIRONMENTAL

Parameter	Reference Std.	Test Condition
Operable Temperature	-45°C to +90°C	Note 1
Storage Temperature	-50°C to +95°C	
Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C,non-condensing,240 hours
Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J	30g, 11ms, half-sine

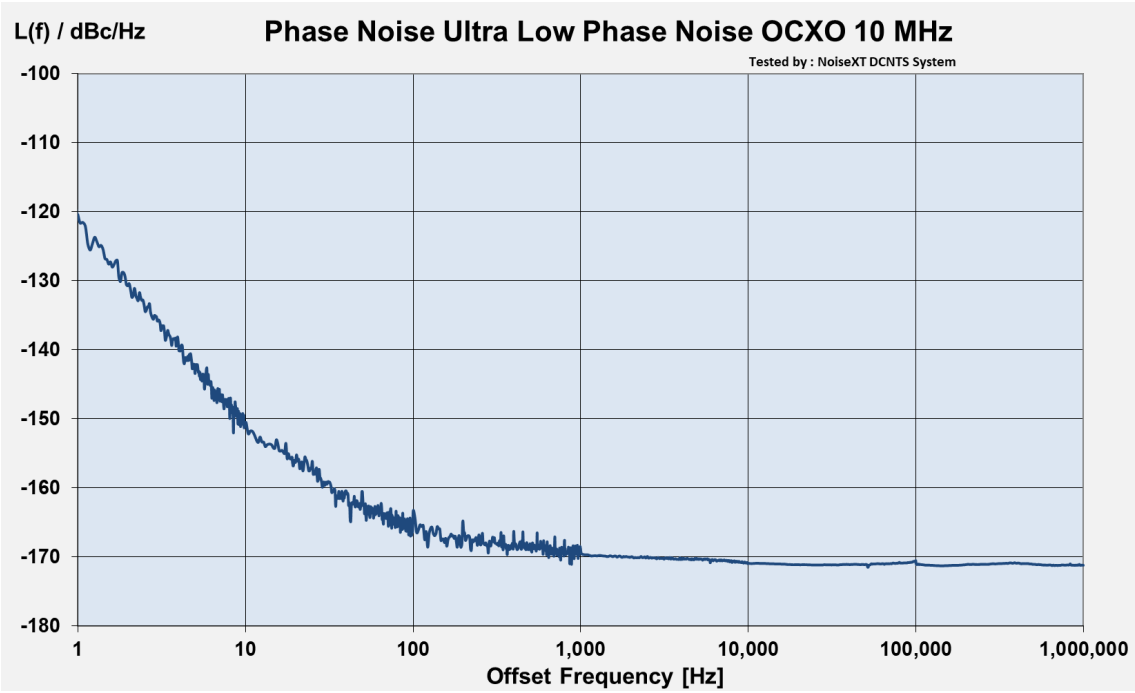
Note 1 : Output maintained over this temperature range. Other requirements of this specification may not be met when operating outside the temperature range in 2.1.

Table 1 : ORDERING INFORMATION

Temp. (°C) / Ambient / Option		Phase Noise Option				g-Sensitivity Option
		A	B	C	D	
-20°C ~+70°C	±30 ppb	NA-10M-6810	NA-10M-6811	NA-10M-6812	NA-10M-6813	Y
		NA-10M-6815	NA-10M-6816	NA-10M-6817	-	N
	±20 ppb	NA-10M-6820	NA-10M-6821	NA-10M-6822	NA-10M-6823	Y
		NA-10M-6825	NA-10M-6826	NA-10M-6827	-	N
	±10 ppb	NA-10M-6830	NA-10M-6831	NA-10M-6832	NA-10M-6833	Y
		NA-10M-6835	NA-10M-6836	NA-10M-6837	-	N
	±5 ppb	NA-10M-6840	NA-10M-6841	NA-10M-6842	NA-10M-6843	Y
		NA-10M-6845	NA-10M-6846	NA-10M-6847	-	N
-40°C~+85°C	±100 ppb	NA-10M-6860	NA-10M-6861	NA-10M-6862	-	Y
		NA-10M-6865	NA-10M-6866	NA-10M-6867	-	N
	±50 ppb	NA-10M-6870	NA-10M-6871	NA-10M-6872	-	Y
		NA-10M-6875	NA-10M-6876	NA-10M-6877	-	N
	±30 ppb	NA-10M-6880	NA-10M-6881	NA-10M-6882	-	Y
		NA-10M-6885	NA-10M-6886	NA-10M-6887	-	N
	±20 ppb	NA-10M-6890	NA-10M-6891	NA-10M-6892	-	Y
		NA-10M-6895	NA-10M-6896	NA-10M-6897	-	N

Note: not all combination of options are available. Other specifications may be available upon request.

Phase Noise Test Data



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