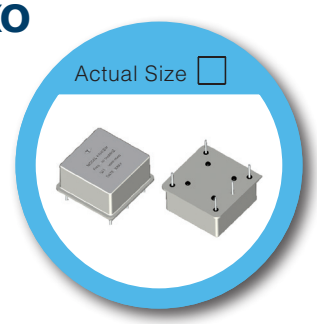
100MHz Low Noise/Low G-Sensitivity OCXO
NA-100M-6800 series



RoHS Compliant

FEATURE

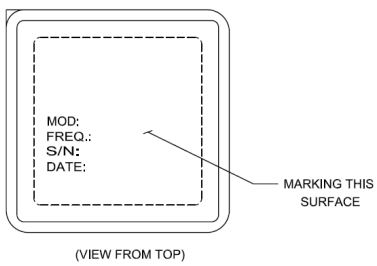
- Low Phase Noise & Low G-Sensitivity
- Small Hermetically Sealed Package
- Tight Frequency Stability
- Low Power Consumption
- Fast Warm-up Time
- Electrical Frequency Tuning Input
- Reference Voltage Output
- RoHS-Compliant (lead-free)

TYPICAL APPLICATION

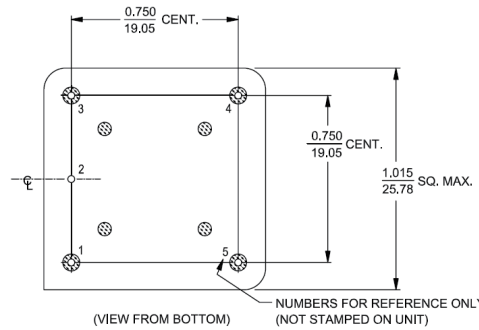
- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Test & Measurement
- Telecom Systems
- Radar Systems

DIMENSION (mm)

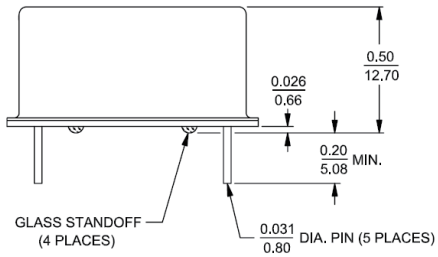
[TOP VIEW]



[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.

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)		100.000000		MHz	
Initial Accuracy	-0.3		+0.3	ppm	@ +25 ±1°C
					after turn on power 60 minutes
					Vco=+5V
Waveform		Sine wave			
Level	+10			dBm	
Load		50		Ω	
Harmonics			-30	dBc	
Spurious			-80	dBc	10Hz ~ 1KHz from carrier
			-100	dBc	1KHz ~ 1MHz from carrier

FREQUENCY STABILITY

Parameter	Min.	Typ.	Max.	Unit	Test Condition	
Ambient	±20, ±50, ±100, ±200			ppb	referred to 25°C	**Refer to Table 1 : Ordering Information**
	-20°C ~ +70°C -40°C ~ +85°C			°C		
Aging						
Daily	-5		+5	ppb	after 30 days	
Yearly	-500		+500	ppb		
10 Years	-2		+2	ppm		
Voltage	-5		+5	ppb	±5% change	
Short term			0.05	ppb	root Allan variance for τ=1 sec	
Load	-5		+5	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 A	Option B	Option C	Option D		Refer to Table 1 : Ordering Information
Phase Noise (Max.)	-93	-97	-100	-105	dBc/Hz	@ 10Hz
	-125	-130	-135	-138	dBc/Hz	@ 100Hz
	-157	-160	-162	-163	dBc/Hz	@ 1KHz
	-173	-173	-173	-172	dBc/Hz	@ 10KHz
	-177	-177	-176	-173	dBc/Hz	@ 100KHz
	-178	-178	-176	-174	dBc/Hz	@ 1MHz

ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Tuning Range	±3			ppm	Referenced to frequency at nominal Center Voltage
Control Voltage	0		+10.0	V	
Slope		Positive			
Center Voltage		+5		V	
Linearity	-10		+10	%	

Specifications subject to change without notice.

INPUT POWER (PIN = "+VDC")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Voltage	+11.4	+12	+12.6	V	
Current					
Steady State			2.0	W	
During Warm-Up			350	mA	

REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE")

Parameter	Min.	Typ.	Max.	Units	Test Condition
Voltage	+9.5	+10	+10.5	V	

ENVIRONMENTAL

Parameter	Reference Std.	Test Condition
Operable Temperature	-40°C to +85°C	Note 1
Storage Temperature	-45°C to +90°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

Ambient / Option Temp. (°C)		Phase Noise Option			
		A	B	C	D
-20°C ~+70°C	±100 ppb	NA-100M-6800	NA-100M-6801	NA-100M-6802	NA-100M-6803
	±50 ppb	NA-100M-6810	NA-100M-6811	NA-100M-6812	NA-100M-6813
	±20 ppb	NA-100M-6830	NA-100M-6831	NA-100M-6832	NA-100M-6833
-40°C~+85°C	±200 ppb	NA-100M-6860	NA-100M-6861	NA-100M-6862	NA-100M-6863
	±100 ppb	NA-100M-6820	NA-100M-6821	NA-100M-6822	NA-100M-6823
	±50 ppb	NA-100M-6870	NA-100M-6871	NA-100M-6872	NA-100M-6873

Other specifications may be available upon request.

Phase Noise Test Data