

# 100MHz Ultra Low Noise/ Low G-Sensitivity OCXO NA-100M-6900 series

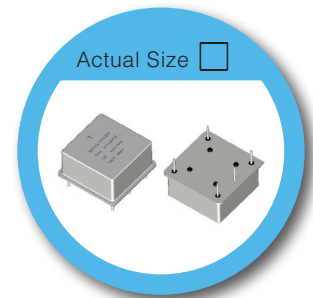
## FEATURE

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

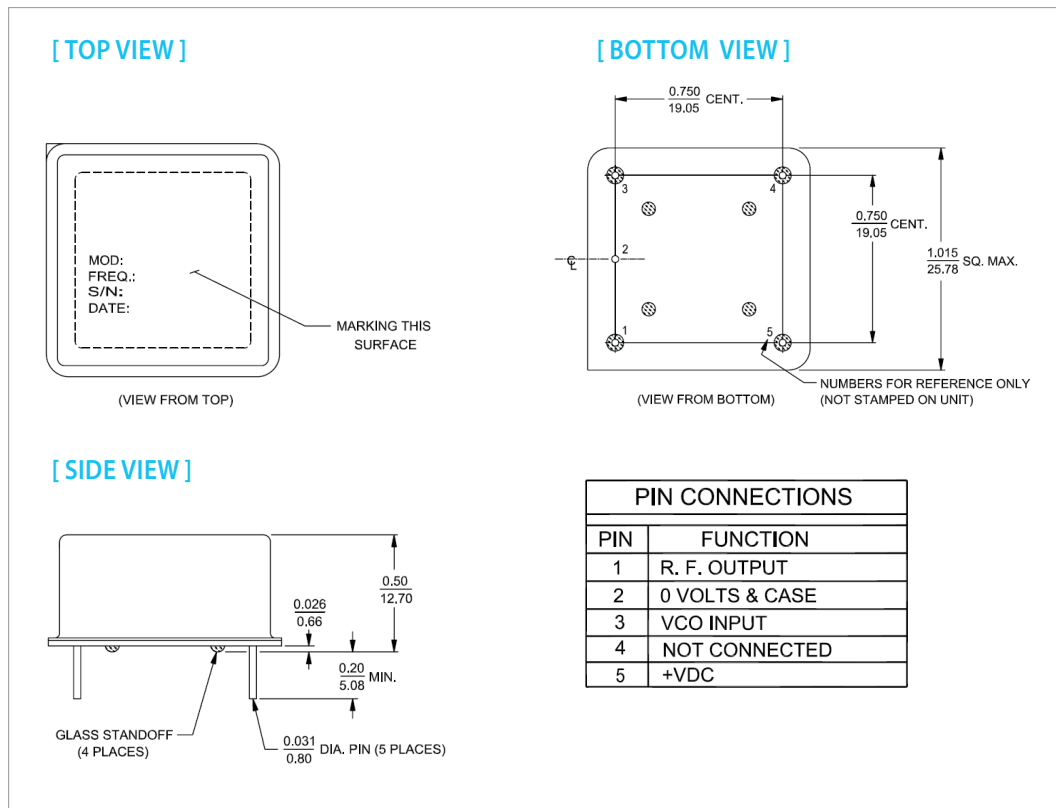
## TYPICAL APPLICATION

- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Test & Measurement
- Telecom Systems
- Radar Systems
- Medical (MRT)

## DIMENSION (mm)



**RoHS Compliant**



## ELECTRICAL SPECIFICATION

Test conditions: VDC = +5V; VCO = +5V; 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 30 minutes Vco=+5V
Waveform	Sine wave				
Level	+15			dBm	
Load		50		Ω	+/-10%
Harmonics			-30	dBc	
Spurious			-100	dBc	

### FREQUENCY STABILITY

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Ambient	±50, ±100 ±200, ±500			ppb	referenced to 25°C <b>Refer to Table 1 : Ordering Information</b>
	-20°C ~ +70°C -40°C ~ +85°C			°C	
Aging					after 30 days of continuous operation
Daily	-5		+5	ppb	
Yearly	-200		+200	ppb	
15 Years	-2		+2	ppm	
Voltage	-5		+5	ppb	±5% change
Load	-5		+5	ppb	±10% change
Short term			0.05	ppb	root Allan variance for τ=1 sec
Warm-up	-50		+50	ppb	in 5 minutes @ +25 ±1°C referenced to 1 hour
G-Sensitivity (each axis)			1	ppb/g	
Phase Noise (Max.)	Option A	Option B			<b>Refer to Table 1 : Ordering Information</b>
	-100	-105	dBc/Hz	@ 10Hz	
	-130	-135	dBc/Hz	@ 100Hz	
	-157	-162	dBc/Hz	@ 1KHz	
	-180	-180	dBc/Hz	@ 10KHz	
	-185	-185	dBc/Hz	@ 100KHz	
	-185	-185	dBc/Hz	@ 1MHz	

### ELECTRICAL FREQUENCY ADJUSTMENT (PIN = “VCO INPUT”)

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Tuning Range	±2.5			ppm	Referenced to frequency at nominal Center Voltage
Control Voltage	0		+10.0	V	
Slope	Positive				
Center Voltage		+5		V	
Linearity	-10		+10	%	

### INPUT POWER (PIN = "+VDC")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Voltage	+4.75	+5	+5.25	V	
Current					
Steady State			2.1	W	@ +25°C
During Warm-Up			950	mA	

### ENVIRONMENTAL

Parameter	Reference Std.	Test Condition
Operable Temperature	-40°C to +85°C	Note 1
Storage Temperature	-55°C to +105°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 Temp. (°C)	Option	Phase Noise Option	
		A	B
-20°C ~ +70°C	±100 ppb	NA-100M-6900	NA-100M-6901
	±50 ppb	NA-100M-6910	NA-100M-6911
-40°C ~ +85°C	±500 ppb	NA-100M-6920	NA-100M-6921
	±200 ppb	NA-100M-6930	NA-100M-6931

Other specifications may be available upon request.

### Phase Noise Test Data

