

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

FEATURES

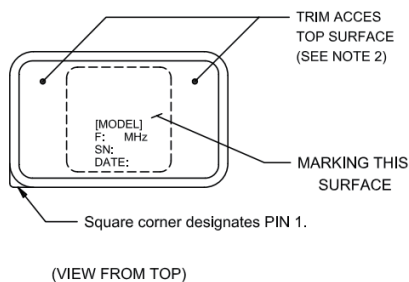
- Low Phase Noise & Low G-Sensitivity
- Small Hermetically Sealed Package
- Tight Frequency Stability
- Low Power Consumption
- Fast Warm-up Time
- Electrical Frequency Tuning Input
- RoHS-Compliant (lead-free)

TYPICAL APPLICATION

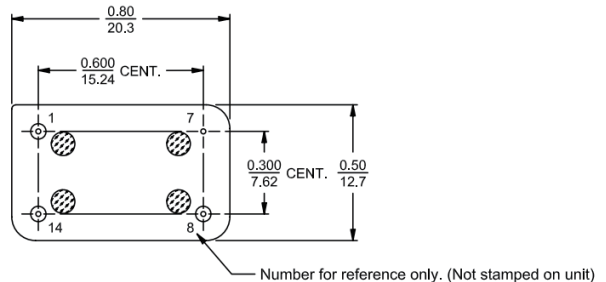
- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Test & Measurement
- Telecom Systems
- Radar Systems

DIMENSION (mm)

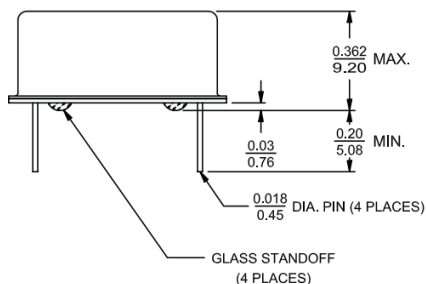
[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



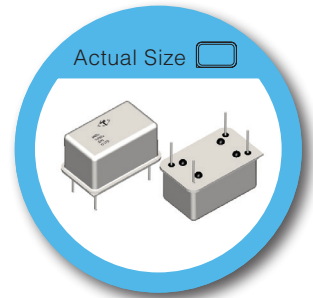
PIN CONNECTIONS

PIN	FUNCTION
1 (See Note 1) or NOT CONNECTED	VCO INPUT
7	0 VOLTS & CASE
8	R.F. OUTPUT
14	+VDC

Notes:

1.If the specification does not specify parameters for PIN 1 then PIN 1 is not internally CONNECTED.

2.If the specification does not specify parameters for "MECHANICAL FREQUENCY ADJUSTMENT" then there is no Trim Access.



RoHS Compliant

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

ELECTRICAL SPECIFICATION

Test conditions: VDC=+5 V; VCO=+2.25 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	-0.2		+0.2	ppm	@ +25 ±1°C
					after turn on power 30 minutes
					Vco=+2.25V
Waveform	Sine wave/ HCMOS				
	Sine wave				
Level	+8			dBm	
Load		50		Ω	
Harmonics			-30	dBc	
Spurious			-80	dBc	
	HCMOS				
Level High	3.8			V	
Level Low			0.4	V	
Load	1 kOhm // 10 pF				
Duty Cycle	40%		60%		
Rise/Fall time			3	ns	20% to 80%

FREQUENCY STABILITY

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Ambient	±50, ±100			ppb	referred to 25°C
	-20°C ~ +70°C			°C	
Aging					Refer to Table 1 : Ordering Information
Daily	-5		+5	ppb	after 30 days
Yearly	-500		+500	ppb	
10 Years	-1.7		+1.7	ppm	
Voltage	-20		+20	ppb	±5% change
Short term			0.05	ppb	root Allan variance for τ=1 sec
Load	-10		+10	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	
Phase Noise (Max.)	Option A		Option B		Refer to Table 1 : Ordering Information
	-100		-103		@ 10Hz
	-130		-135		@ 100Hz
	-160		-162		@ 1KHz
	-173		-173		@ 10KHz
	-177		-176		@ 100KHz
	-178		-178		@ 1MHz

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

ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Tuning Range	±2			ppm	Referenced to frequency at nominal Center Voltage
Control Voltage	0		+4.5	V	
Slope		Positive			
Center Voltage		+2.25		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			1.2	W	
During Warm-Up			500	mA	

ENVIRONMENTAL

Parameter	Reference Std.	Test Condition
Operable Temperature	-20°C to +70°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.

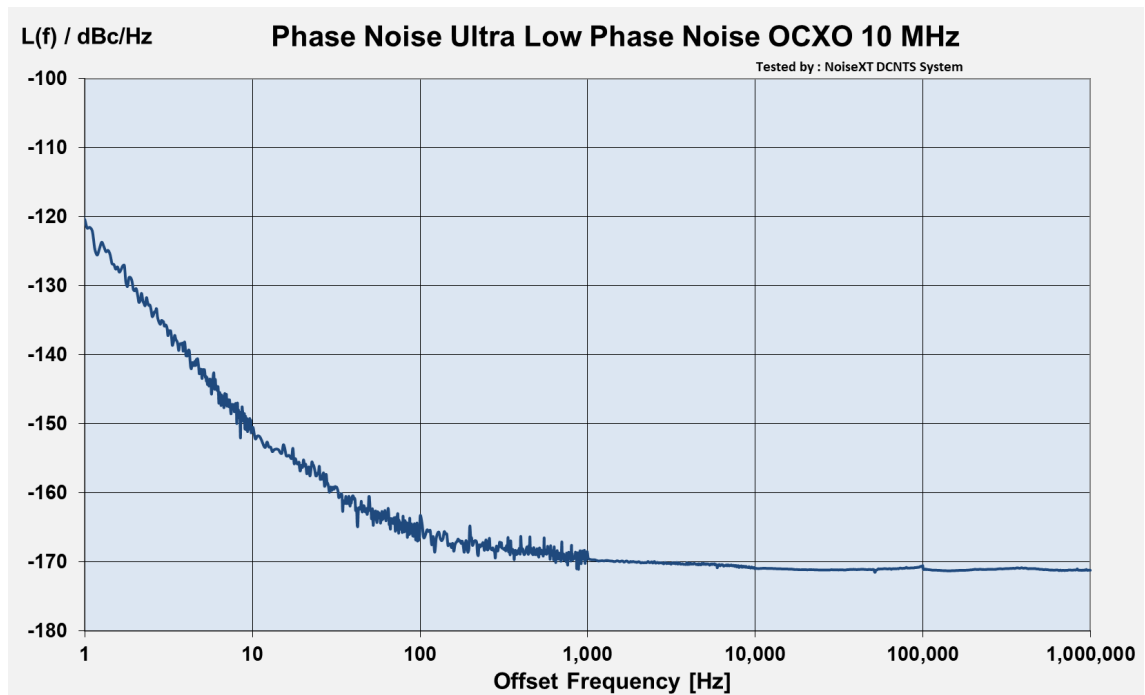
Table 1 : ORDERING INFORMATION

Ambient Temp. (°C)	Option	Output	Phase Noise Option	
			A	B
-20°C ~ +70°C	±100 ppb	Sine Wave	NF-100M-6800	NF-100M-6801
	±50 ppb		NF-100M-6810	NF-100M-6811
-20°C ~ +70°C	±100 ppb	HCMOS	NF-100M-6850	NF-100M-6851
	±50 ppb		NF-100M-6860	NF-100M-6861

Other specifications may be available upon request.

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Phase Noise Test Data



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