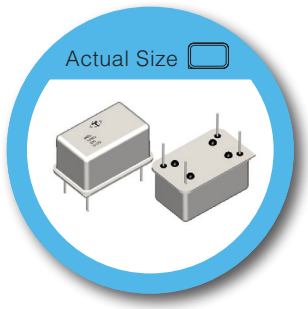
100MHz Low Noise/ Low G-Sensitivity OCXO NF-100M-6800 series



RoHS Compliant

FEATURES

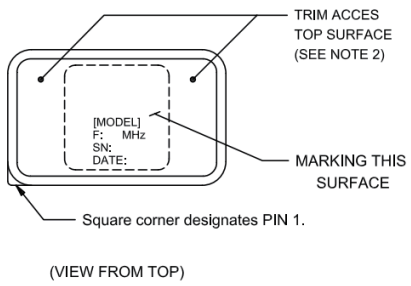
-Low Phase Noise & Low G-Sensitivity
-Small Hermetically Sealed Package
-Tight Frequency Stability
-Low Power Consumption
-Fast Warm-up Time
-Electrical Frequency Tuning Input
-RoHS-Compliant (lead-free)

TYPICAL APPLICATION

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

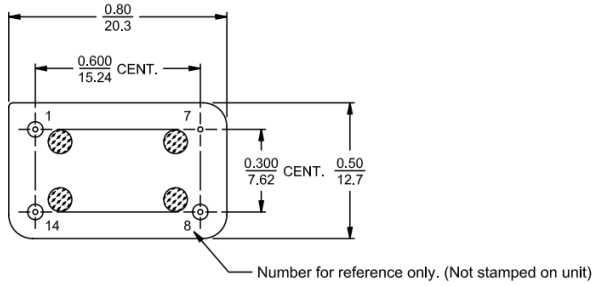
DIMENSION (mm)

[TOP VIEW]

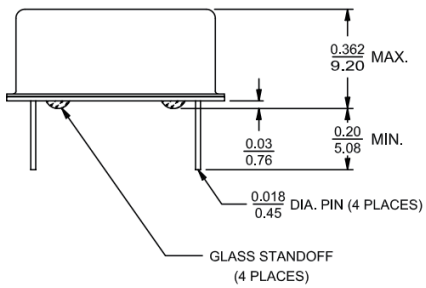


(VIEW FROM TOP)

[BOTTOM VIEW]



[SIDE VIEW]



PIN CONNECTIONS	
PIN	FUNCTION
1 (See Note 1)	VCO INPUT or NOT CONNECTED
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.

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	**Refer to Table 1 : Ordering Information**
		-20°C ~ +70°C		°C		
Aging						
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	dBc/Hz	@ 10Hz
	-130	-135	dBc/Hz	@ 100Hz
	-160	-162	dBc/Hz	@ 1KHz
	-173	-173	dBc/Hz	@ 10KHz
	-177	-176	dBc/Hz	@ 100KHz
	-178	-178	dBc/Hz	@ 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.

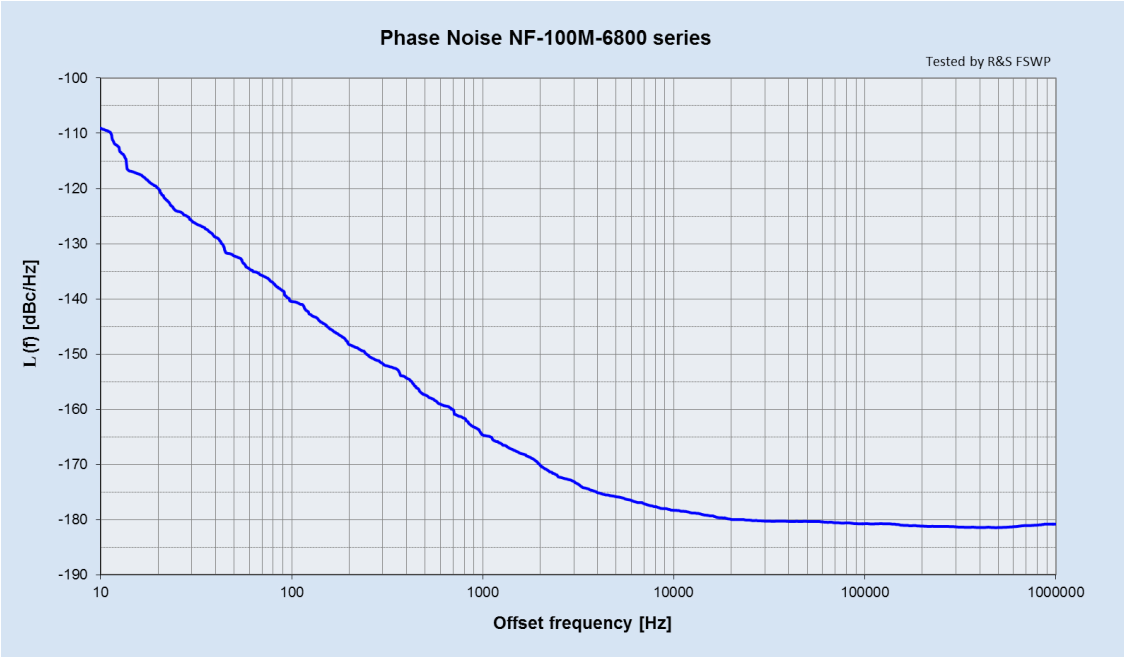
Table 1 : ORDERING INFORMATION

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.

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

Phase Noise Test Data



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