

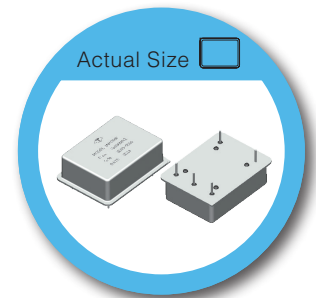
Double Oven Controlled Crystal Oscillator NI-100MHz-6700 Series

FEATURES

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

TYPICAL APPLICATION

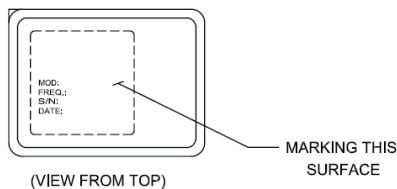
- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Test & Measurement
- Telecom Systems
- Radar Systems
- Medical (MRT)



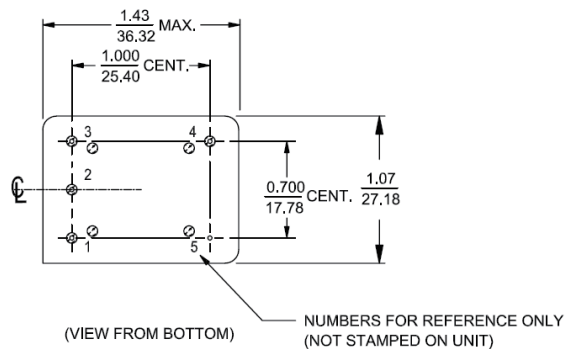
RoHS Compliant

DIMENSION (mm)

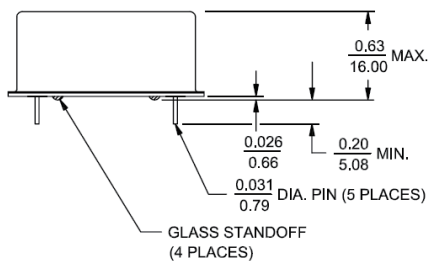
[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



PIN CONNECTIONS

PIN	FUNCTION
1	VCO INPUT
2	NOT CONNECTED
3	+VDC
4	R. F. OUTPUT
5	0 VOLTS & CASE

ELECTRICAL SPECIFICATION

Test conditions: VDC= +12V; 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	-0.2		+0.2	ppm	after turn on power 30 minutes Within 90 days following date code
Waveform		Sine wave			
Level	+7			dBm	
Load		50		Ω	±10%
Harmonics			-30	dBc	
Spurious			-100	dBc	100Hz to 5MHz from carrier

FREQUENCY STABILITY

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Ambient		±100		ppb	referenced to 25°C Refer to Table 1 : Ordering Information
		-40°C ~ +85°C		°C	
Aging					after 30 days of continuous operation
Daily	-5		+5	ppb	
Yearly	-300		+300	ppb	
10 Years	-1.5		+1.5	ppm	
Voltage	-10		+10	ppb	±5% change
Load	-5		+5	ppb	±10% change
Short term			0.1	ppb	root Allan variance for τ=1 sec
Warm-up	-100		+100	ppb	in 5 minutes referenced to 1 hour
Phase Noise			-100	dBc/Hz	@ 10Hz
			-130	dBc/Hz	@ 100Hz
			-155	dBc/Hz	@ 1KHz
			-162	dBc/Hz	@ 10KHz
			-168	dBc/Hz	@ 100KHz
			-168	dBc/Hz	@ 1MHz
Phase Jitter(RMS)			0.1	pSec	12KHz ~ 20MHz
G-Sensitivity (each axis)	Option A	Option B	Option C		Refer to Table 1 : Ordering Information
	0.5	0.2	0.1	ppb/g	

ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Tuning Range	±2.0			ppm	Referenced to frequency at nominal Center Voltage
Control Voltage	0		+10.0	V	
Slope		Positive			
Center Voltage		+5		V	
Linearity	-10		+10	%	
Modulation Bandwidth	1			KHz	3dB cut off frequency

INPUT POWER (PIN = "+VDC")

Parameter	Min.	Typ.	Max.	Unit	Test Condition
Voltage	+11.4	+12	+12.6	V	
Current					
Steady State			1.9	W	@ +25°C
During Warm-Up			400	mA	

REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE")

Parameter	Min.	Typ.	Max.	Unit	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	-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	G-Sensitivity Option		
		A	B	C
-40°C~+85°C	±100 ppb	NI-100M-6700	NI-100M-6701	NI-100M-6702

Other specifications may be available upon request.

G-Sensitivity Test Data

