

100MHz *Ultra Low G-Sensitivity* OCXO

NI-100M-6700 series

NI-100M-6700 Series in 36.3x27.2mm DIP package

NI-100M-6700 series is a 100.000 MHz high performance (VC)OCXO offering Ultra low G sensitivity(LGS) and tight frequency stability down to $\pm 100\text{ppb}(-40^{\circ}\text{C to }+85^{\circ}\text{C})$.

The part comes in a small hermetically sealed through hole package which makes it suitable for humid environmental conditions.



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)

APPLICATIONS

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

RoHS Compliant Standard

ELECTRICAL SPECIFICATIONS

Test conditions: VDC = +12V; VCO = +5V; at $+25 \pm 3^{\circ}\text{C}$ unless otherwise identified

1. OUTPUT (PIN = "R.F. OUTPUT")

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
1.1.	Frequency (Fo)	100.000000			MHz	
1.2.	Initial Accuracy	-0.2		+0.2	ppm	after turn on power 30 minutes Within 90 days following date code
1.3.	Waveform	Sine wave				
1.4.	Level	+7			dBm	
1.5.	Load		50		Ω	$\pm 10\%$
1.6.	Harmonics			-30	dBc	
1.7.	Spurious			-100	dBc	100Hz to 5MHz from carrier

2. FREQUENCY STABILITY

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
2.1.	Ambient	±100			ppb	referenced to 25°C Refer to Table 1 : Ordering Information
		-40°C ~ +85°C			°C	
2.2.	Aging					after 30 days of continuous operation
	Daily	-5		+5	ppb	
	Yearly	-300		+300	ppb	
	10 Years	-1.5		+1.5	ppm	
2.3.	Voltage	-10		+10	ppb	±5% change
2.4.	Load	-5		+5	ppb	±10% change
2.5.	Short term			0.1	ppb	root Allan variance for τ=1 sec
2.6.	Warm-up	-100		+100	ppb	in 5 minutes referenced to 1 hour
2.7.	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
2.8.	Phase Jitter(RMS)			0.1	pSec	12KHz ~ 20MHz
2.9.	G-Sensitivity (each axis)	Option A	Option B	Option C		Refer to Table 1 : Ordering Information
		0.5	0.2	0.1	ppb/g	

3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

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

4. INPUT POWER (PIN = "+VDC")

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

5. REFERENCE VOLTAGE (PIN = "REFERENCE VOLTAGE")

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

6. ENVIRONMENTAL

	Parameter	Reference Std.	Test Condition
6.1.	Operable Temperature	-40°C to +85°C	Note 1
6.2.	Storage Temperature	-55°C to +105°C	
6.3.	Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C, non-condensing, 240 hours
6.4.	Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
6.5.	Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J	30g, 11ms, half-sine

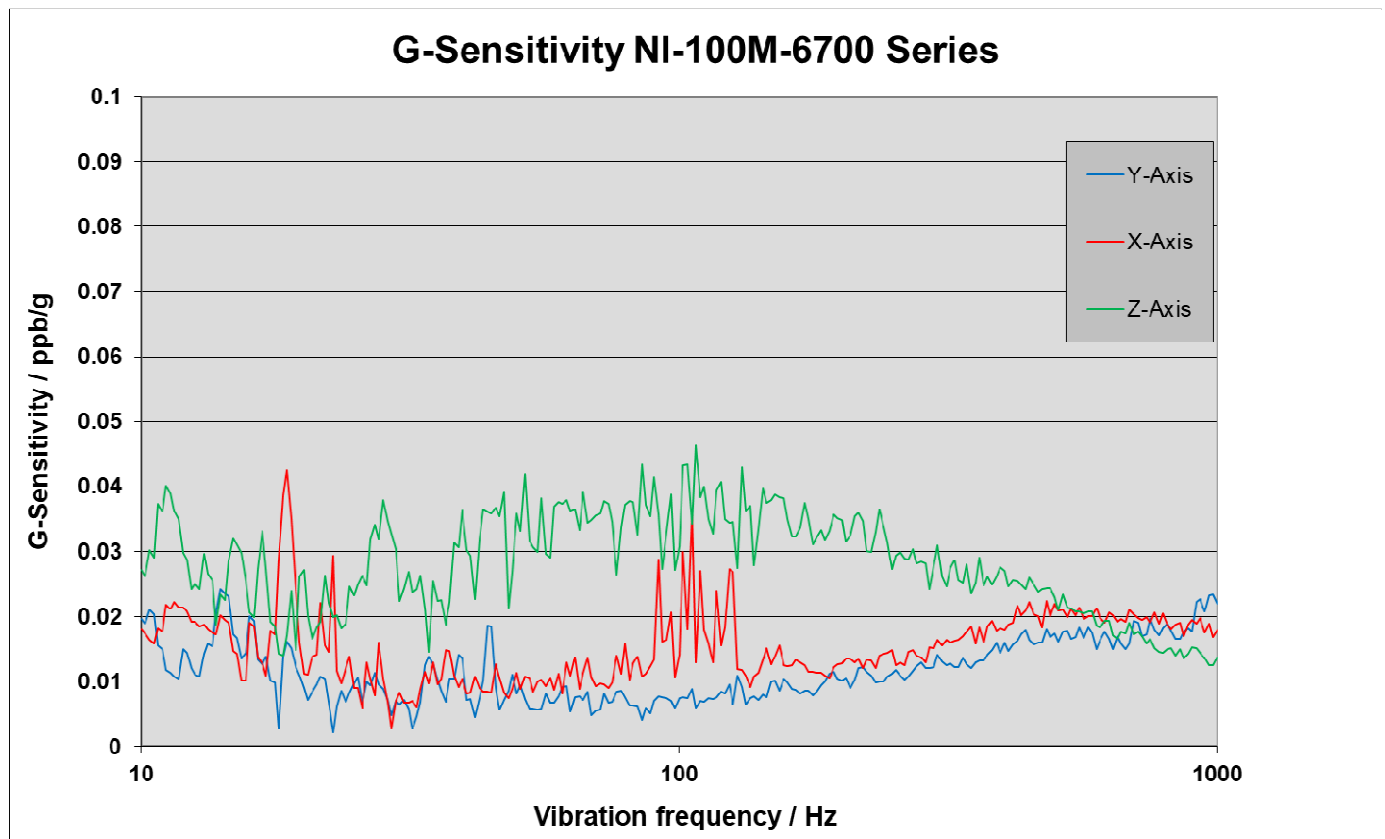
Note 1 : Output maintained over this temperature range. Other requirements of this specification may not be met when operating outside the temperature range in 2.1.

Table 1 : ORDERING INFORMATION

Ambient		Option	G-Sensitivity Option		
Temp. (°C)			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



OUTLINE DRAWING

