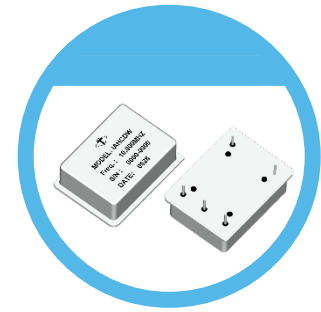


NI-100M-6700 Series

100MHz Ultra Low G-Sensitivity Oven Controlled Crystal Oscillator

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)

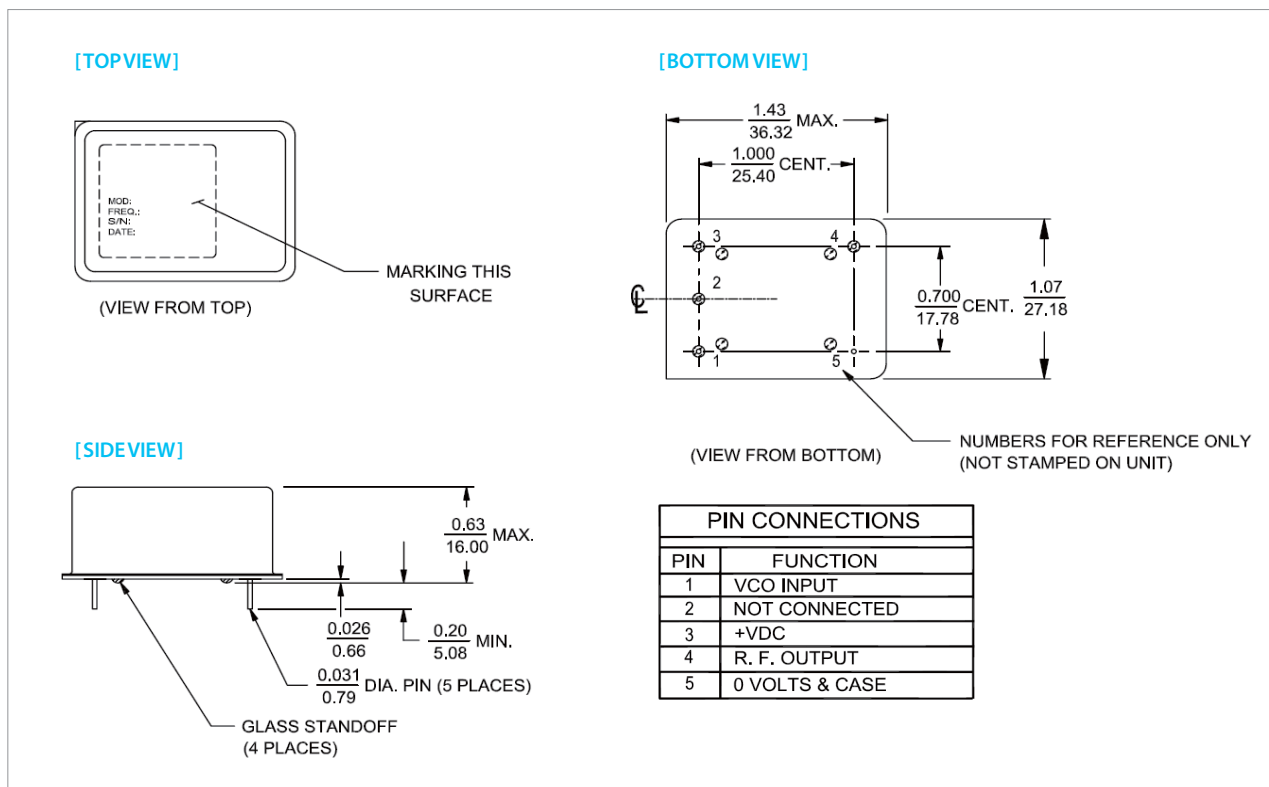


RoHS Compliant

TYPICAL APPLICATION

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

DIMENSION (mm)



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

Specifications subject to change without notice.

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 | Daily | -5 | +5 | ppb | after 30 days of continuous operation |
| | 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 $\tau = 1$ sec |
| Warm-up | -100 | | +100 | ppb | in 5 minutes referenced to 1 hour |
| Phase Noise | | | -100 | dBc/Hz | @ 10Hz |
| | | | -130 | dBc/Hz | @ 100Hz |
| | | | -157 | dBc/Hz | @ 1KHz |
| | | | -162 | dBc/Hz | @ 10KHz |
| | | | -164 | dBc/Hz | @ 100KHz |
| Phase Jitter(RMS) | | | -164 | dBc/Hz | @ 1MHz |
| | | | 0.1 | pSec | 12KHz ~ 20MHz |
| G-Sensitivity (each axis) | Option A | Option B | Option C | Option D | Refer to Table 1 : Ordering Information |
| | 0.5 | 0.2 | 0.1 | 0.05 | |

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 |

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

Specifications subject to change without notice.

INPUT POWER (PIN = "+VDC")

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

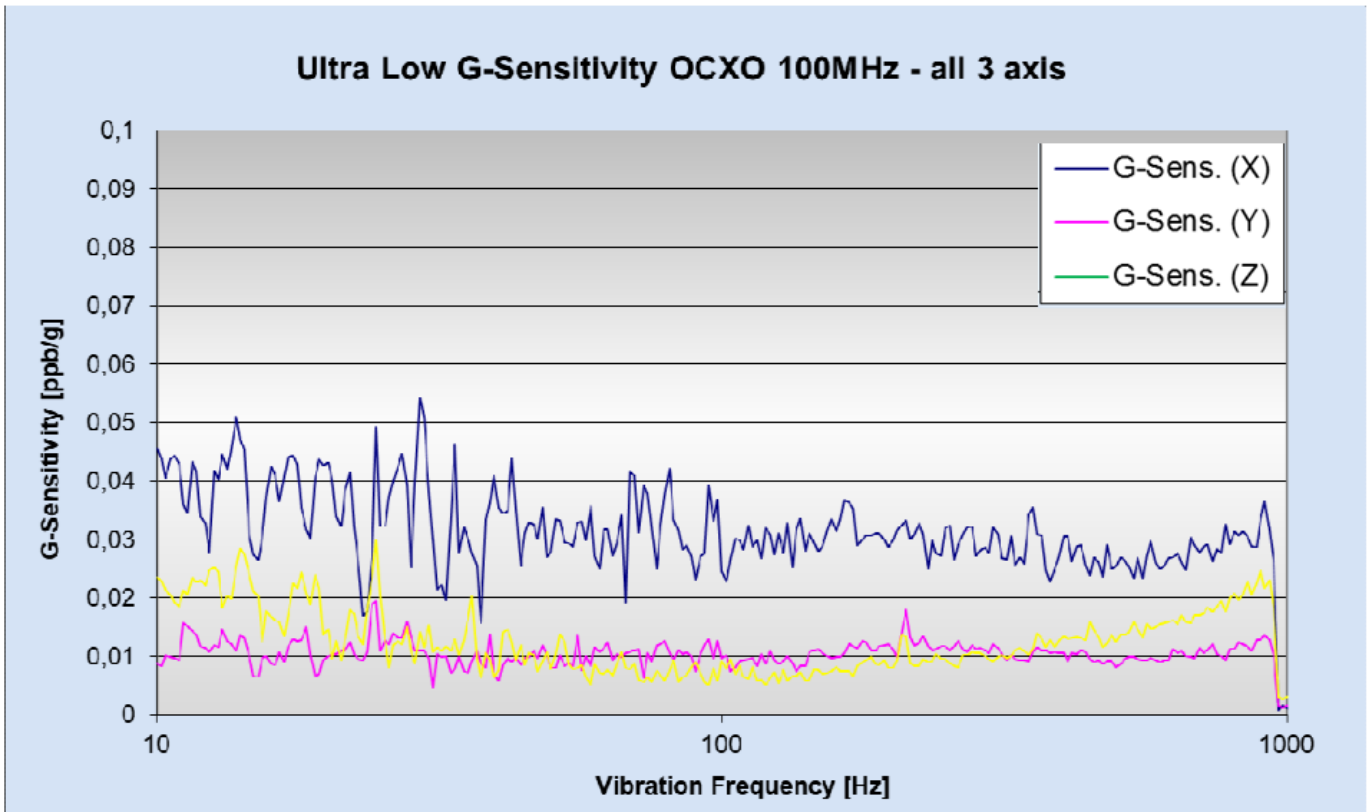
Note 1 : Output maintained over this temperature range. Other requirements of this specification may not be met when operating outside the operating temperature range.

Table 1 : ORDERING INFORMATION

| Ambient Temp. (°C) | | Option | G-Sensitivity Option | | | |
|--------------------|--|-----------|----------------------|--------------|--------------|--------------|
| | | | A | B | C | D |
| -40°C~+85°C | | ± 100 ppb | NI-100M-6700 | NI-100M-6701 | NI-100M-6702 | NI-100M-6703 |

Other specifications may be available upon request.

G-Sensitivity Test Data



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

Specifications subject to change without notice.