TAITIEN
Our Performance Your Reputation

10MHz *Low Noise/Low G-Sensitivity* OCXO
NA-10M-6800 series

NA-10M-6800 Series in 25.4x25.4mm DIP package



NA-10M-6800 series is a 10.000 MHz high performance (VC)OCXO with low phase noise(LPN) and low G sensitivity(LGS). It has excellent temperature versus frequency stability with many available options. The part is housed in a hermetically sealed RoHS package which protects it from extreme changes in external humidity and pressure.

RoHS Compliant Standard

FEATURES

- **Low Phase Noise**
- Small Hermetically Sealed Package
- Tight Frequency Stability
- Low Power Consumption
- 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

ELECTRICAL SPECIFICATIONS

Test conditions: VDC = +12 V; VCO = +5 V; at +25 ± 3°C unless otherwise identified

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

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
1.1.	Frequency (Fo)		10.000000		MHz	
1.2.	Initial Accuracy	-0.1		+0.1	ppm	@ +25 ±1°C after turn on power 30 minutes
1.3.	Waveform		Sine wave			
1.4.	Level	+8			dBm	
1.5.	Load		50		Ω	
1.6.	Harmonics			-30	dBc	
1.7.	Spurious			-80	dBc	10Hz to 1MHz from carrier

2. FREQUENCY STABILITY

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
2.1.	Ambient	±5, ±10, ±20, ±30, ±50			ppb	referred to 25°C	**Refer to Table 1 : Ordering Information**
		-20°C ~ +70°C -40°C ~ +85°C			°C		
2.2.	Aging						
	Daily	-0.5		+0.5	ppb	after 30 days of continuous operation	±0.3ppb/day is available.
	Yearly	-50		+50	ppb		
	10 Years	-0.3		+0.3	ppm		
2.3.	Voltage	-1		+1	ppb	±5% change	
2.4.	Short term		0.002		ppb	root Allan variance for τ=1 sec	
2.5.	Load	-1		+1	ppb	±5% change	
2.6.	Warm-up	-50		+50	ppb	in 5 minutes @ +25 ±1°C	referred to 1 hour
2.7.	G-Sensitivity (each axis)			1	ppb/g	**Option, Refer to Table 1 : Ordering Information**	

		Option A	Option B	Option C	Option D		Refer to Table 1 : Ordering Information
2.8.	Phase Noise (Max.)	-105	-110	-115	-118	dBc/Hz	@ 1Hz
		-135	-140	-142	-146	dBc/Hz	@ 10Hz
		-155	-155	-155	-160	dBc/Hz	@ 100Hz
		-165	-165	-165	-166	dBc/Hz	@ 1KHz
		-170	-170	-170	-169	dBc/Hz	@ 10KHz
		-170	-170	-170	-170	dBc/Hz	@ 100KHz
		-170	-170	-170	-170	dBc/Hz	@ 1MHz

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

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
3.1.	Tuning Range	±0.4*			ppm	Referenced to frequency at nominal Center Voltage
3.2.	Control Voltage	0.5		+9.5	V	
3.3.	Slope		Positive			
3.4.	Center Voltage		+5.0		V	
3.5.	Linearity	-10		+10	%	

*** Sufficient to adjust the oscillator to nominal frequency for 10 years. Some unit will have ±0.7ppm tuning range.**

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

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
4.1.	Voltage	+11.4	+12	+12.6	V		
4.2.	Current						
	Steady State			150	mA	@ +25°C, operating -20°C ~ +70°C	**Refer to Table 1 : Ordering Information**
				180		@ +25°C, operating -40°C ~ +85°C	
	During Warm-Up			400	mA	@ +25°C, operating -20°C ~ +70°C	
				500		@ +25°C, operating -40°C ~ +85°C	

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

	Parameter	Min.	Typ.	Max.	Units	Test Condition
5.1.	Voltage	+9.0	+9.5	+10.0	V	
5.2.	Source Resistance			100	Ohm	
5.3.	Load Impedance	10			Kohm	

6. ENVIRONMENTAL

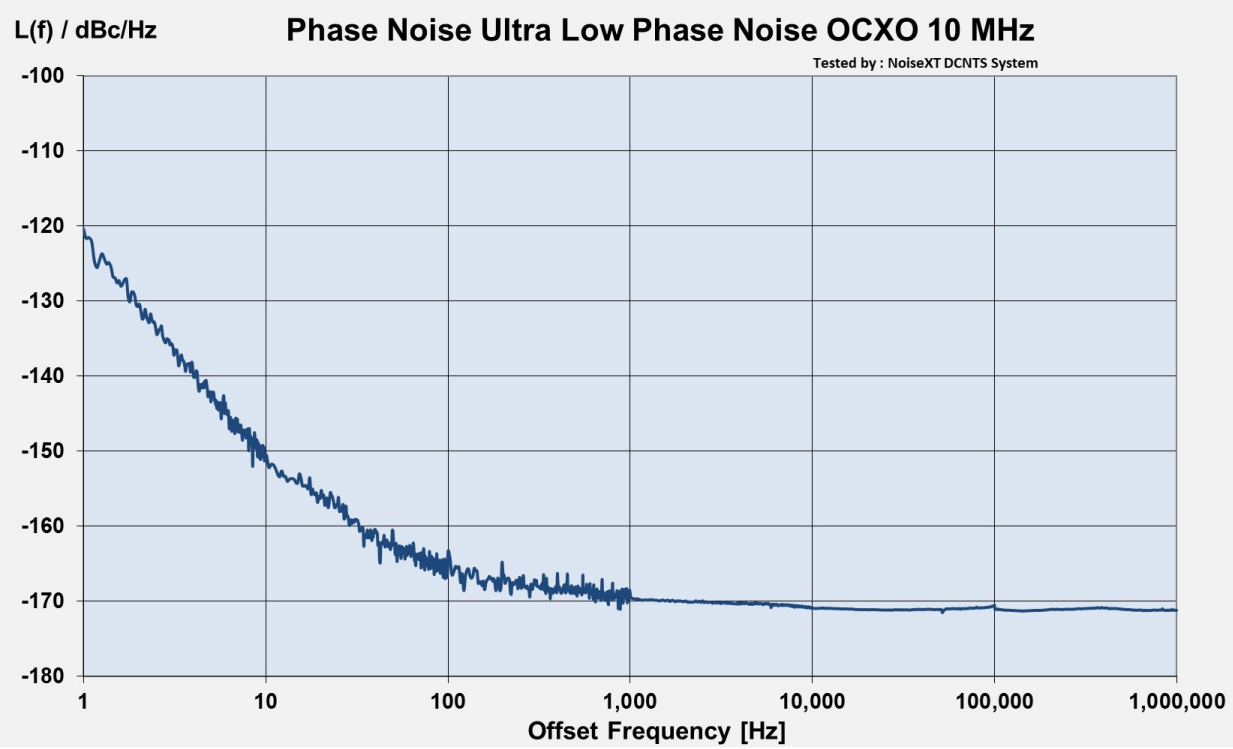
	Parameter	Reference Std.	Test Condition
6.1.	Operable Temperature	-45°C to +90°C	Note 1
6.2.	Storage Temperature	-50°C to +95°C	
6.3.	Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C,non-condensing,240 hours
6.4.	Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 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.

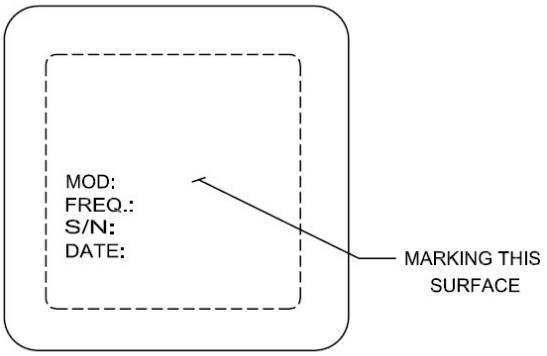
Table 1 : ORDERING INFORMATION

Temp. (°C) / Ambient / Option		Phase Noise Option				g-Sensitivity Option
		A	B	C	D	
-20°C ~+70°C	±20 ppb	NA-10M-6820	NA-10M-6821	NA-10M-6822	NA-10M-6823	Y
		NA-10M-6825	NA-10M-6826	NA-10M-6827	-	N
	±10 ppb	NA-10M-6830	NA-10M-6831	NA-10M-6832	NA-10M-6833	Y
		NA-10M-6835	NA-10M-6836	NA-10M-6837	-	N
	±5 ppb	NA-10M-6840	NA-10M-6841	NA-10M-6842	NA-10M-6843	Y
		NA-10M-6845	NA-10M-6846	NA-10M-6847	-	N
-40°C~+85°C	±50 ppb	NA-10M-6870	NA-10M-6871	NA-10M-6872	-	Y
		NA-10M-6875	NA-10M-6876	NA-10M-6877	-	N
	±20 ppb	NA-10M-6890	NA-10M-6891	NA-10M-6892	-	Y
		NA-10M-6895	NA-10M-6896	NA-10M-6897	-	N

Phase Noise Test Data

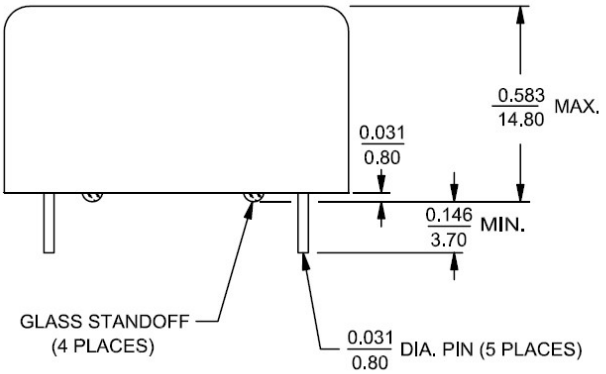


OUTLINE DRAWING



(VIEW FROM TOP)

PIN CONNECTIONS	
PIN	FUNCTION
1	R. F. OUTPUT
2	0 VOLTS & CASE
3 (See Note 1)	VCO INPUT or NOT CONNECTED
4 (See Note 1)	REFERENCE VOLTAGE or NOT CONNECTED
5	+VDC

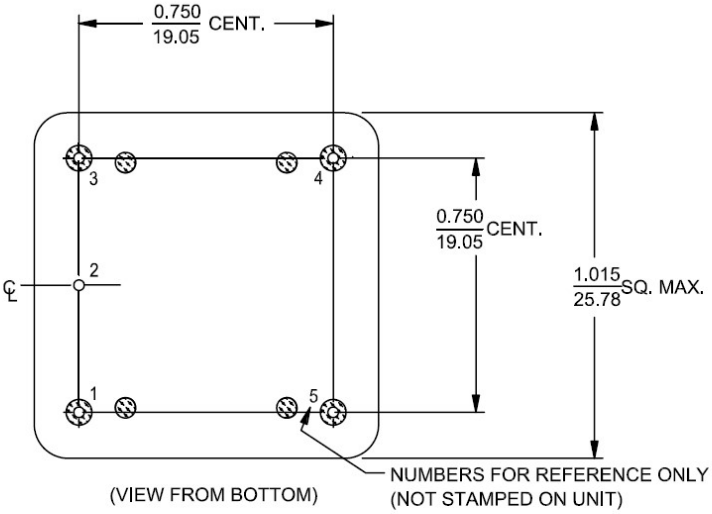


Note 1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is NOT internally CONNECTED.

MARKING







(VIEW FROM BOTTOM)

INCH / mm (REFERENCE ONLY)

REV.	DATE	DESCRIPTION	ECO.NO.	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
1.0	01/18/2013		N00????	RX,C	SY	SY	IMYeh	2:1
								DATE
								01/18/2013

TAITIEN ELECTRONICS(NANJING)CO.,LTD.

TOLERANCES:
UNLESS OTHERWISE SPECIFIED:
ANGLES: ±1 DEGREE
FRACTIONS:±1/32 INCH
DECIMALS: .XX±.015,.XXX±.010 INCH

M-NA-002-N

REV. 1.0