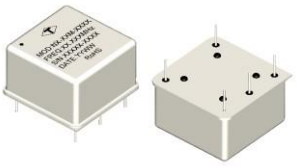
TAITIEN
Our Performance Your Reputation

100MHz *Ultra Low Power* OCXO
NP-100M-7000 Series

NP-100M-7000 Series in 20.6x20.6x11mm package

NP-100M-7000 series is a 100MHz high performance (VC)OCXO offering ultra low power and tight frequency stability down to ±100ppb(-40ºC to +85ºC). The part comes in a hermetically sealed through hole package which makes it suitable for humid environmental conditions.



FEATURES

- ***Ultra Low Power Consumption***
- SC cut crystal
- Tight Frequency Stability
- Low Phase Noise

APPLICATIONS

- Portable Communication System
- High precision GPS receivers
- Mobile Test Equipment
- UHF Synthesizers
- Battery Powered Equipment

ELECTRICAL SPECIFICATIONS

Test conditions: VDC = +3.3 V; VC = +1.4V; at +25 ± 3°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	@ +25 ±3°C
						after turn on power 30 minutes
						Vcon=+1.4V
1.3.	Waveform		Sine Wave			
1.4.	Level	+4			dBm	
1.5.	Load		10KΩ//15pF		Ω	

2. FREQUENCY STABILITY

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
2.1.	Ambient		±100		ppb	referred to 25°C	±5ppb optional
			-40ºC ~ +85ºC		°C		
2.2.	Aging						
	Daily	-3		+3	ppb	after 30 days	
	Yearly	-300		+300	ppb		
2.3.	Voltage	-3		+3	ppb	±5% change	
2.4.	Short term		0.05		ppb	root Allan variance for τ=1 sec	
2.5.	Warm-up	-100		+100	ppb	in 60 seconds @ +25 ±3°C	referred to 15 minutes
2.6.	G-Sensitivity (each axis)		±0.5		ppb/g		
2.7.	Phase Noise			-90	dBc/Hz	@ 10Hz	
				-120	dBc/Hz	@ 100Hz	
				-150	dBc/Hz	@ 1KHz	
				-162	dBc/Hz	@ 10KHz	
				-168	dBc/Hz	@ 100KHz	

3. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCON")

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
3.1.	Tuning Range	±0.7			ppm	Referenced to frequency at nominal Center Voltage
3.2.	Control Voltage	0		+2.8	V	
3.3.	Slope		Positive			
3.4.	Center Voltage		+1.4		V	
3.5.	Linearity	-10		+10	%	
3.6.	Input Impedance	50			kΩ	

4. INPUT POWER (PIN = "+V_{DD}")

	Parameter	Min.	Typ.	Max.	Unit	Test Condition
4.1.	Voltage	+3.13	+3.3	+3.47	V	
4.2.	Power Consumption					
	Steady State		120	145	mW	at 25ºC
	During Warm-Up			500		

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

	Parameter	Min.	Typ.	Max.	Units	Test Condition
5.1.	Voltage	+2.7	+2.8	+2.9	V	

6. ABSOLUTE MAXIMUM RATINGS

	Parameter	Min.	Typ.	Max.	Units	Test Condition
6.1.	Input Power(V_{DD})	-0.3		+4.6	V	
6.2.	Control Voltage (VCON)	-0.3		+4.6	V	

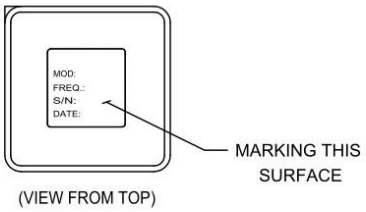
7. ENVIRONMENTAL

	Parameter	Reference Std.	Test Condition
7.1.	Operable Temperature	-40°C to +85°C	Note 1
7.2.	Storage Temperature	-45°C to +90°C	
7.3.	Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C,non-condensing,240 hours
7.4.	Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
7.5.	Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J	30g, 11ms, half-sine
7.6.	Reflow is Forbidden	Hand solder only – not reflow compatible. 260ºC 10s (on pin)	

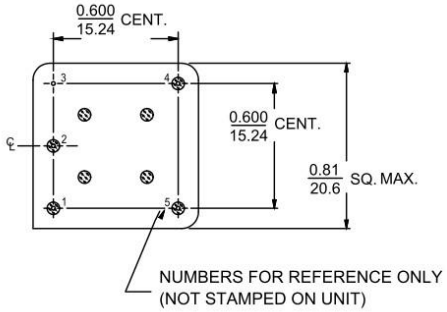
Note 1 : Output maintained over this temperature range. Other requirements of this specification may not be met when operating outside the temperature range in 2.1.

OUTLINE DRAWING

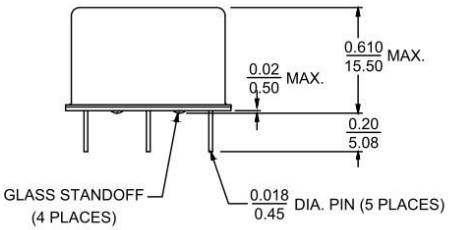
[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



MARKING

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

Note 1. If the specification does not specify parameters for either PIN1 or PIN2 then that respective PIN is NOT internally CONNECTED.