TAITIEN
Our Performance Your Reputation

100MHz Low Noise/Low G-Sensitivity OCXO
NJ-100M-6800 series

6800 Series in 25.4x22mm SMD package

NJ-100-6800 series is a 100.000 MHz high performance (VC)OCXO offering low phase noise(LPN), low G sensitivity(LGS) and tight frequency stability down to ±50ppb(-20ºC to +70ºC). The part comes in a small SMD package which makes it suitable for reflow soldering during pick and place assembly

RoHS Compliant Standard

FEATURES

- **Low Phase Noise & Low G-Sensitivity**
- Small SMD 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
- Satellite Communication

ELECTRICAL SPECIFICATIONS

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

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
1.1.	Frequency		100.000000		MHz		
1.2.	Initial Accuracy	-0.3		+0.3	ppm	@ +25 ±1°C	
						after turn on power 60 minutes	
						Vc=+5V	
1.3.	Waveform		Sine wave				
1.4.	Level	+10			dBm	Option C	**Refer to Table 1 : Ordering Information**
		+13				Option A, B	
1.5.	Load		50		Ω		
1.6.	Harmonics			-30	dBc		
1.7.	Spurious			-100	dBc		
1.8.	G-Sensitivity (all 3 axis)			1	ppb/g	**Option, Refer to Table 1 : Ordering Information**	

2. FREQUENCY STABILITY

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
2.1.	Ambient	±50, ±100			ppb	referenced to 25°C	**Refer to Table 1 : Ordering Information**
		-20°C ~ +70°C -40°C ~ +85°C			°C		
2.2.	Aging						
	Daily	-5		+5	ppb	after 30 days	
	Yearly	-500		+500	ppb		
	15 Years	-3		+3	ppm		
2.3.	Voltage	-5		+5	ppb	±5% change	
2.4.	Short term			0.05	ppb	root Allan variance for τ=1 sec	
2.5.	Load	-5		+5	ppb	±10% change	
2.6.	Warm-up	-50		+50	ppb	in 5 minutes @ +25 ±1°C	referenced to 1 hour
2.7.	Phase Noise (Max.)	**Option A**	**Option B**	**Option C**		**Refer to Table 1 : Ordering Information**	
		-93	-97	-100	dBc/Hz	@ 10Hz	
		-125	-130	-135	dBc/Hz	@ 100Hz	
		-154	-157	-160	dBc/Hz	@ 1KHz	
		-173	-173	-170	dBc/Hz	@ 10KHz	
		-177	-175	-172	dBc/Hz	@ 100KHz	
		-180	-178	-175	dBc/Hz	@ 1MHz	

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

	Parameter	Min.	Typ.	Max.	Unit	Test Condition	
3.1.	Tuning Range			-4	ppm	VCO @ Min. Voltage	Referenced to frequency at nominal Center Voltage
		+4			ppm	VCO @ Max. Voltage	
3.2.	Control Voltage	0		+10.0	V		
3.3.	Slope		Positive				
3.4.	Center Voltage		+5		V		
3.5.	Linearity	-10		+10	%		

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			1.8	W	@ +25°C, operating -20°C~+70ºC	**Refer to Table 1 : Ordering Information**
				2.1		@ +25°C, operating -40°C~+85ºC	
	During Warm-Up			300	mA	@ +25°C, operating -20°C~+70ºC	
				380		@ +25°C, operating -40°C~+85ºC	

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

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

6. ENVIRONMENTAL

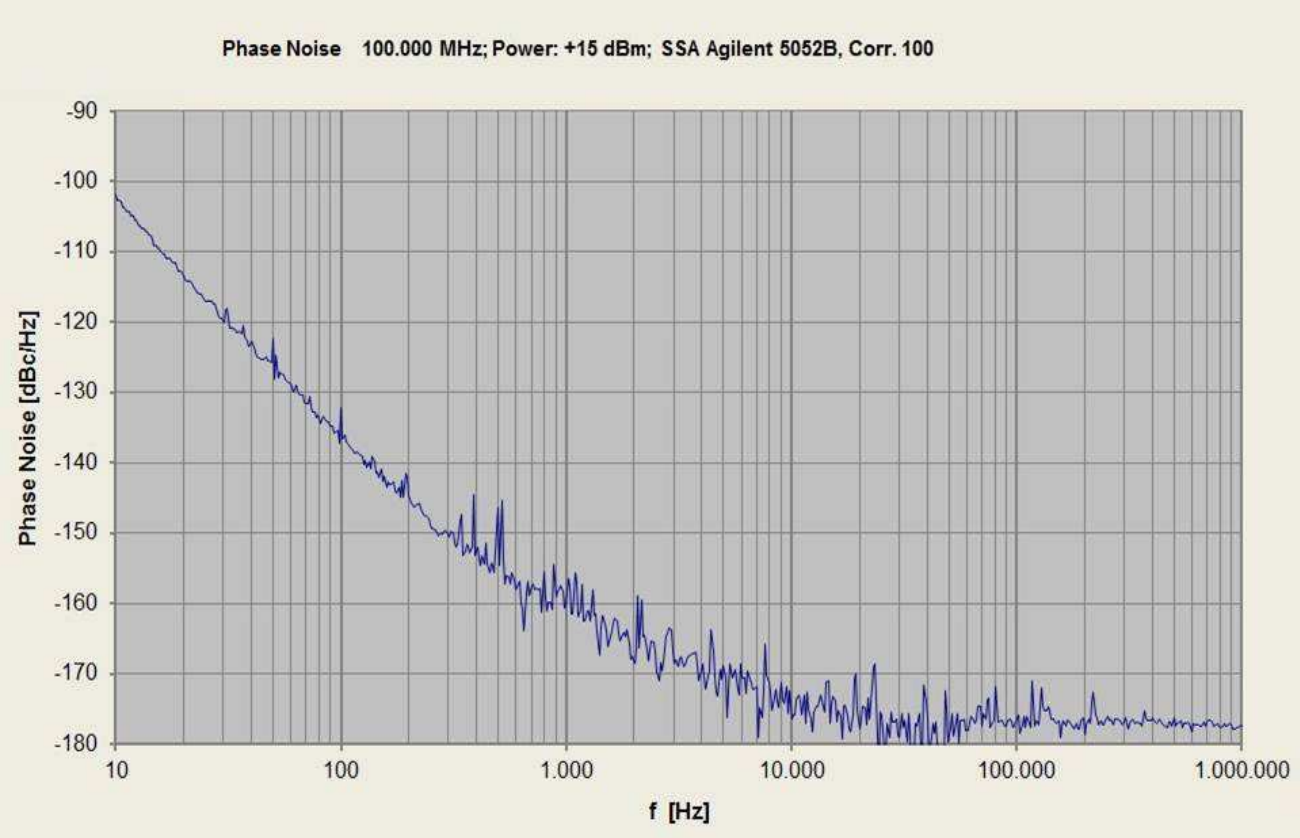
	Parameter	Reference Std.	Test Condition
6.1.	Operating Temperature	-40°C to +85°C	Note 1
6.2.	Storage Temperature	-55°C to +105°C	
6.3.	Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C,non-condensing,240 hours
6.4.	Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 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

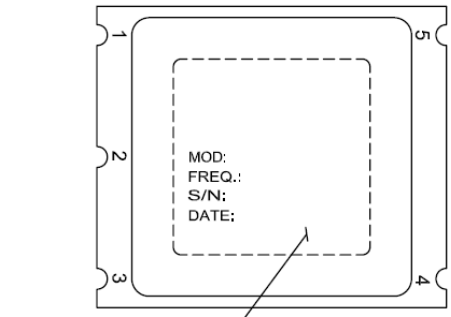
Ambient Temp. (°C) / Option		Phase Noise Option			G-Sensitivity Option
		A	B	C	
-20°C ~+70°C	±100 ppb	NJ-100M-6800	NJ-100M-6801	NJ-100M-6802	Y
		NJ-100M-6805	NJ-100M-6806	NJ-100M-6807	N
	±50 ppb	NJ-100M-6810	NJ-100M-6811	NJ-100M-6812	Y
		NJ-100M-6815	NJ-100M-6816	NJ-100M-6817	N
-40°C~+85°C	±100 ppb	NJ-100M-6820	NJ-100M-6821	NJ-100M-6822	Y
		NJ-100M-6825	NJ-100M-6826	NJ-100M-6827	N
	±50 ppb	Not Available			

Phase Noise Test Data



OUTLINE DRAWING

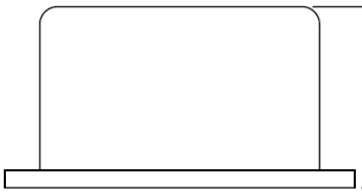
(VIEW FROM TOP)



MARKING THIS SURFACE

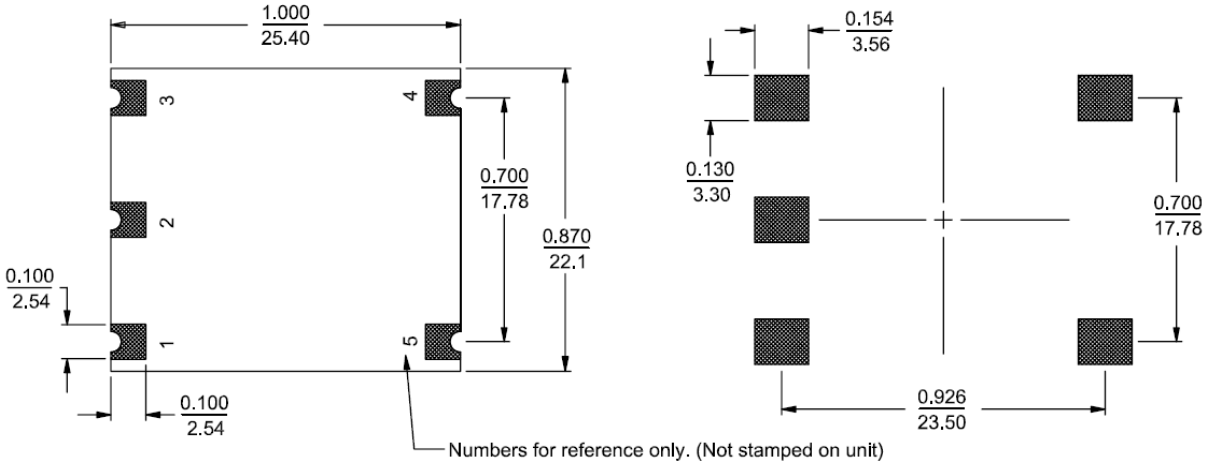
MARKING

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



Note 1. If the specification does not specify parameters for either PIN1or PIN2 then that respective PIN is NOT internally CONNECTED.

RECOMMENDED SOLDER PAD LAYOUT



(VIEW FROM BOTTOM)

INCH / mm (REFERENCE ONLY)

REV.	DATE	DESCRIPTION	ECO.NO.	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
1.0	03/19/2014		N00????	RX.C	SY	SY	IMYeh	2:1
								DATE
								03/19/2014

TAITIEN ELECTRONICS(NANJING)CO.,LTD.

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

M-NJ-001-N

REV. 1.0