

TT Type High Precision TCXO

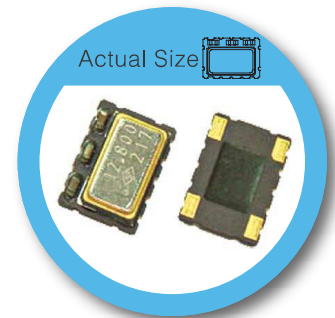
7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator

FEATURE

- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, $\pm 0.2\text{ppm}$, -40°C ~ +105°C, $\pm 2\text{ppm}$.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

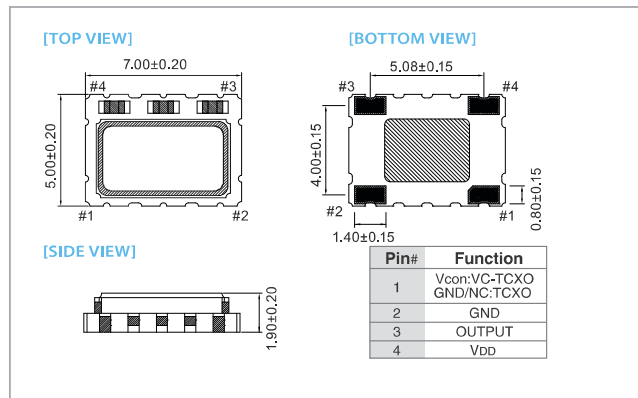
TYPICAL APPLICATION

- Femtocell, Base Stations
- WLAN/WiMAX/WIFI, Wireless Communications

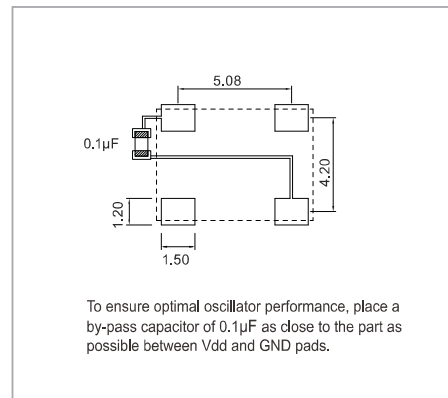


RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3 / 3.0 V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	VDD-5%	VDD+5%	VDD-5%	VDD+5%	V
Frequency Range	5	52	5	52	MHz
Standard Frequency	10, 12.8, 16.384, 19.2, 19.44, 20, 25, 26				
Frequency Tolerance*	—	± 2.0	—	± 2.0	ppm
Frequency Stability					
Vs Supply Voltage ($\pm 5\%$) change	—	± 0.1	—	± 0.05	ppm
Vs Load ($\pm 10\%$) change	—	± 0.05	—	± 0.05	ppm
Vs Aging (@ 1st year)	—	± 1.0	—	± 1.0	ppm / year
Supply Current (CMOS output)	—	6	—	6	mA
Supply Current (Clipped Sine Wave)	—	3.5	—	3.5	mA
Output Level (CMOS)	Output High (Logic "1")	90%VDD	90%VDD	—	V
	Output Low (Logic "0")	—	10%VDD	10%VDD	V
	Duty	45	45	55	%
Output Level (Clipped Sine Wave)	0.8	—	0.8	—	Vp-p
Load (CMOS)	15pF		15pF		
Load (Clipped Sine Wave)	10 K Ω // 10pF		10 K Ω // 10pF		
Control Voltage Range (VCTCXO)	0.5	2.5	0.5	2.5	V
Pulling Range (VCTCXO)	± 5.0	—	± 5.0	—	ppm
Vc Input Impedance (VCTCXO)	100	—	100	—	k Ω
Phase Noise @ 10 MHz	100 Hz	-130			
	1 kHz	-145			
	10 kHz	-154			
Start time	—	2	—	2	mSec
Storage Temp. Range	-55	125	-55	125	°C

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

* Frequency at 25°C, 1 hour after reflow.

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	± 0.05	± 0.1	± 0.14	± 0.2	± 0.28	± 0.5	± 2
-10 ~ +70	○	○	○	○	○	○	○	○
-20 ~ +70	×	○	○	○	○	○	○	○
-40 ~ +85	×	×	×	○	○	○	○	○
-40 ~ +95	×	×	×	×	×	×	△	○
-40 ~ +105	×	×	×	×	×	×	×	○

* ○: Available △: Conditional X: Not available

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

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