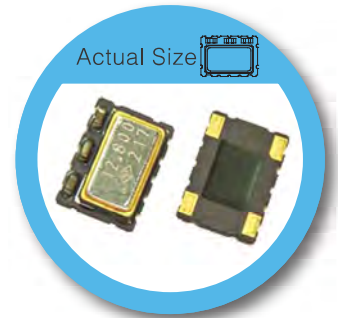


# TT Type High Precision TCXO

## 7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator



### FEATURE

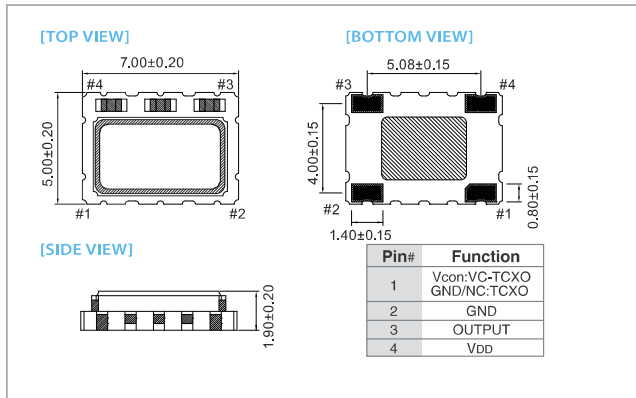
- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, ±0.2ppm, -40°C ~ +105°C, ±2ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

### TYPICAL APPLICATION

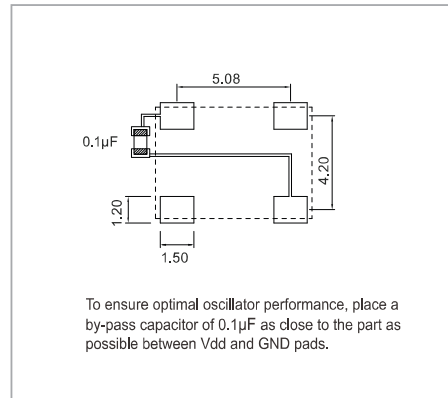
- Femtocell, Base Stations
- WLAN/WiMAX/WIFI, Wireless Communications

RoHS Compliant

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3V		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 (±5%) change	-	±0.1	-	±0.05	ppm	
Vs Load (±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	-	V	
	Duty	45	55	45	55	%
Output Level (Clipped Sine Wave)		0.8	-	0.8	Vp-p	
Load (CMOS)	15pF		15pF			
Load (Clipped Sine Wave)	10 KΩ // 10pF		10 KΩ // 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	-	kΩ	
Phase Noise @ 10 MHz	100 Hz	-	-130	-	dBc/Hz	
	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

