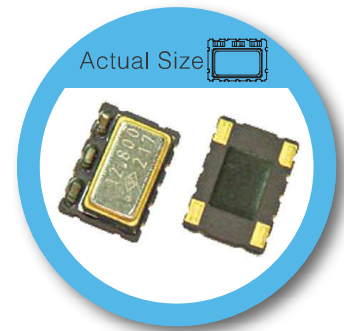


# TT Type High Precision TCXO

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



### FEATURE

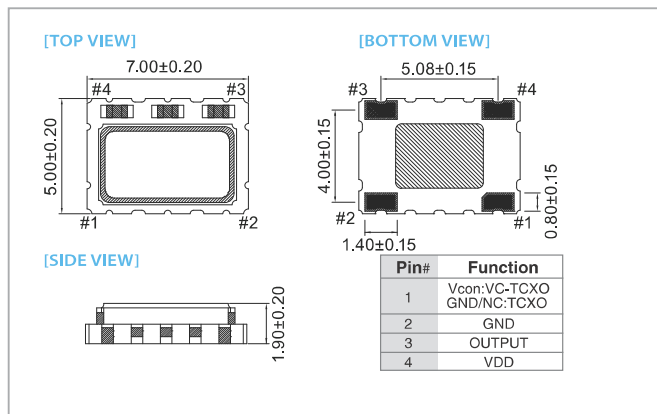
- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, ±0.2ppm, -40°C ~ +105°C, ±2ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

### TYPICAL APPLICATION

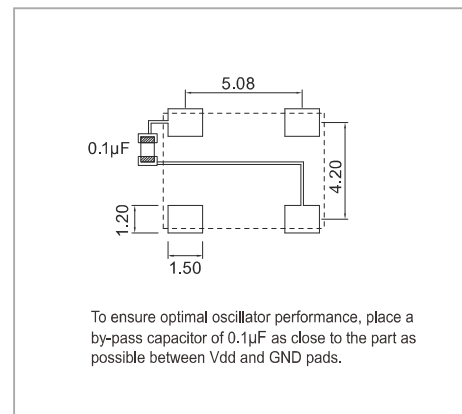
- Femtocell, Base Stations
- WLAN/WiMAX/WIFI, Wireless Communications

**RoHS Compliant**

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3 V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (V <sub>DD</sub> ) ±5%	4.75	5.25	2.97	3.63	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")	4.5	-	2.97	-	V
Output Low (Logic "0")	-	0.5	-	0.33	V
Duty	45	55	45	55	%
Output Level (Clipped Sine Wave)	0.8	-	0.8	-	V <sub>p-p</sub>
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
V <sub>c</sub> Input Impedance (VCTCXO)	100	-	100	-	kΩ
Phase Noise @ 12.8 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 ~ +55	○	○	○	○	○	○
-10 ~ +60	○	○	○	○	○	○
-20 ~ +70	△	○	○	○	○	○
-40 ~ +85	X	X	X	○	○	○

\* ○: Available △: Conditional X: Not available

### FREQ. STABILITY vs. WIDE TEMP. RANGE

Temp. (°C)	ppm	±0.5	±2
-40 ~ +85	○	○	○
-40 ~ +105	X	○	○

\* ○: Available △: Conditional X: Not available

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

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