



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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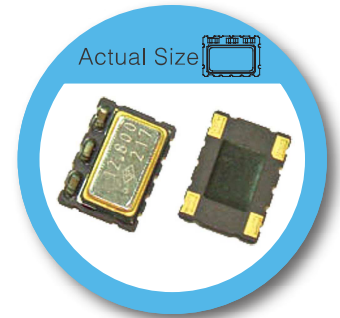
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# TT Type High Precision TCXO

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



### FEATURE

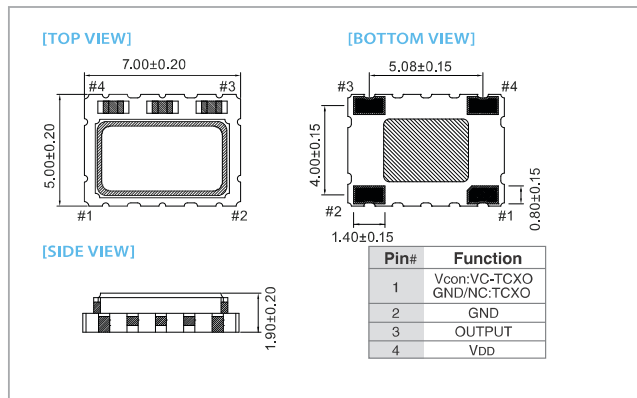
- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, ±0.2ppm, -40°C ~ +105°C, ±2ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

### TYPICAL APPLICATION

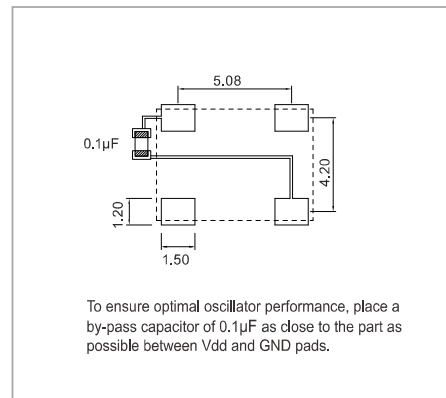
- Femtocell, Base Stations
- WLAN/WiMAX/WIFI, Wireless Communications

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") Output Low (Logic "0") Duty		90%VDD 10%VDD 45 55		V %
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

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

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