

TS Type High Precision 7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator

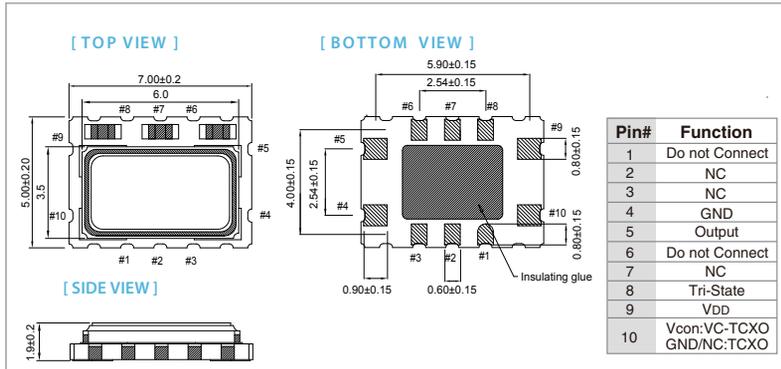
FEATURE

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

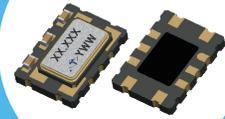
TYPICAL APPLICATION

- Femtocell, Base Stations
- WLAN / WiMAX / WiFi, Wireless Communications
- Mobile Phone

DIMENSION (mm)

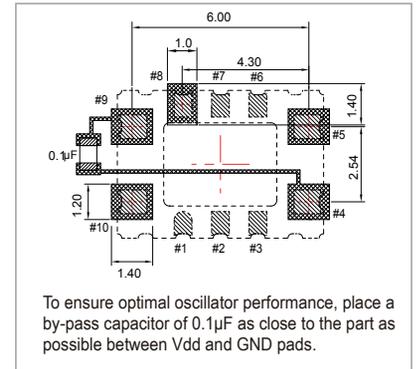


Actual Size 



RoHS Compliant

SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	2.5V		3.3V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	VDD-5%	VDD+5%	VDD-5%	VDD+5%	V
Frequency Range	10	52	10	52	MHz
Standard Frequency (for CMOS)		10, 12.5, 12.8, 16, 16.384, 19.44, 25			
Standard Frequency (for Clipped Sine Wave)		10, 12.5, 12.8, 16, 16.384, 19.44, 25			ppm
Frequency Tolerance*		±2.0		±1.0	
Frequency Stability					ppm
Vs Supply Voltage (±5%) change	-	±0.1	-	±0.1	
Vs Load (±10%) change	-	±0.1	-	±0.1	
Vs Aging	-	±1.0	-	±1.0	
Supply Current (CMOS output)	-	8	-	8	mA
Supply Current (Clipped Sine Wave)	-	5	-	5	
Output Level (CMOS)					V
Output Low (Logic"1")	90%VDD	-	90%VDD	-	
Output Low (Logic"0")	-	10%VDD	-	10%VDD	
Output Level (Clipped Sine Wave)	0.8	55	0.8	55	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	±12.0	±5.0	±12.0	ppm
Vc Input Impedance (VCTCXO)	100	-	100	-	KΩ
Phase Noise @ 19.2MHz					dBc / Hz
100 Hz		-120		-120	
1 KHz		-140		-140	
10 KHz		-148		-148	
Start Time	-	10	-	10	mSec
Tri-State					V
Disable	-	0.3	-	0.3	
Enable	2.0	-	2.6	-	
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	
-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.

Specifications subject to change without notice.