

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

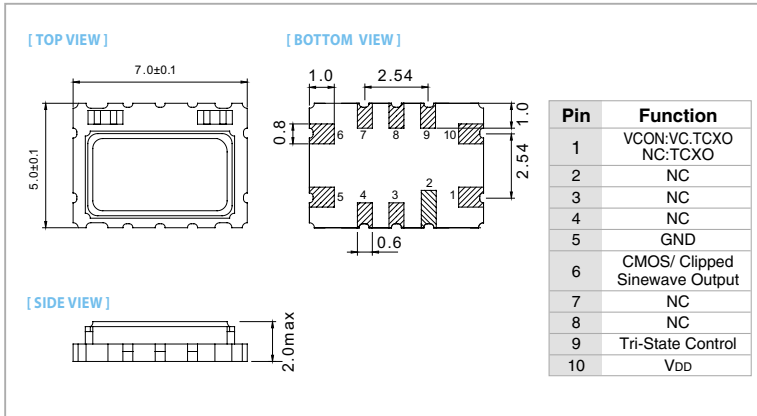
FEATURE

- Typical 7.0 x 5.0 x 1.85 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, ±0.28ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.
- Packing: Tape & Reel 1000/3000pcs per Reel.

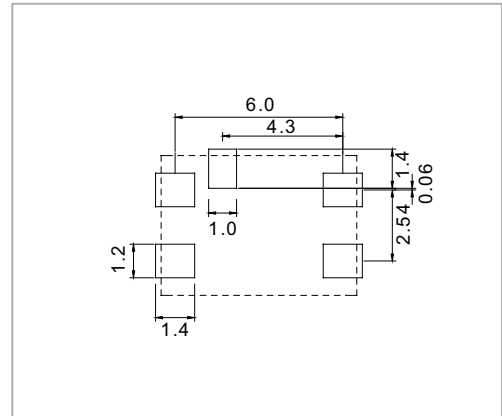
TYPICAL APPLICATION

- Femtocell , Base Stations
- WLAN/WiMax/WIFI, Wireless Communications
- Mobile Phone

RoHS Compliant Standard
DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3 V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) 5%	4.75	5.25	3.135	3.465	V
Frequency Range	5	26	5	26	MHz
Standard Frequency (for CMOS)	5, 6.4, 8, 8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Standard Frequency (for Clipped sine)	8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Frequency Tolerance*	-	±2.0	-	±2.0	ppm
Frequency Stability					
Vs Supply Voltage (±5%) change)	-	±0.3	-	±0.3	ppm
Vs Load (±10%) change	-	±0.2	-	±0.2	
Vs Aging	-	±1.0	-	±1.0	
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	
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 @ 12.8 MHz					
100 Hz	-120		-120		dBc / Hz
1 KHz	-140		-140		
10 KHz	-148		-148		
Start Time	-	2	-	2	mSec
Tri-State					
Disable	-	0.3VDD	-	0.3VDD	V
Enable	0.7VDD	-	0.7VDD	-	
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	±0.14	±0.28	±0.37	±0.5
0 ~ +55	○	○	○	○	○
-10 ~ +60	○	○	○	○	○
-20 ~ +70	○	○	○	○	○
-40 ~ +85	×	○	○	○	○

* ○: Standard △: Available (case by case) X: Not available