

TS Type

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

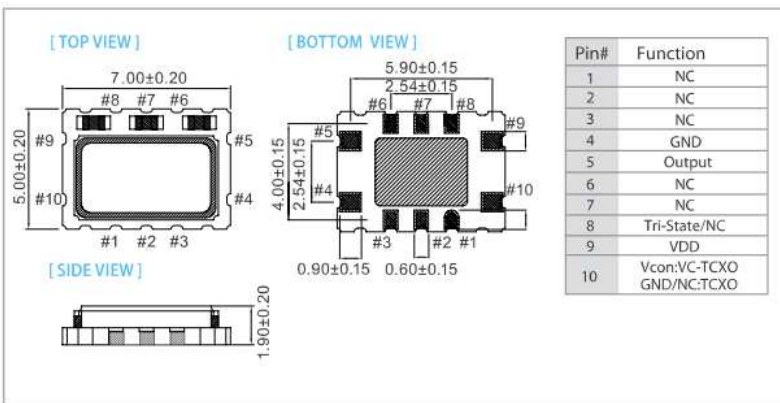
FEATURE

- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision for -40 °C~+85 °C, ±0.28ppm
- 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)

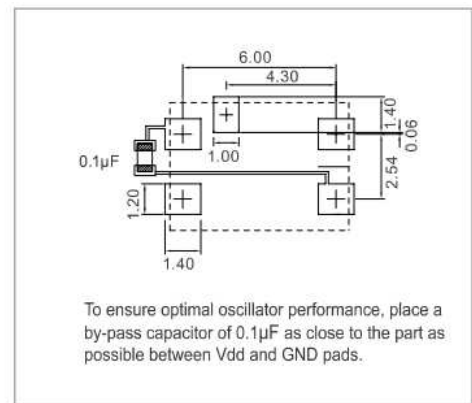


Actual Size 



RoHS Compliant

SOLDER PAD LAYOT (mm)



ELECTRICAL SPECIFICATION

Parameter	5.0V		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 (for CMOS)	5, 6.4, 8, 8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Standard Frequency (for Clipped Sine Wave)	8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				ppm
Frequency Tolerance*	±2.0		±2.0		
Frequency Stability	±0.5		±0.5		ppm
Vs Supply Voltage (±5%) change	±0.2		±0.2		
Vs Load (±10%) change	±1.0		±1.0		
Vs Aging	6.0		6.0		mA
Supply Current (CMOS output)	3.5		3.5		
Supply Current (Clipped Sine Wave)	-		-		V
Output Level (CMOS)	90%VDD	-	90%VDD	-	
Output Low (Logic"1")	-	10%VDD	-	10%VDD	Vp-p
Output Low (Logic"0")	45	55	45	55	
Duty	0.8	-	0.8	-	
Output Level (Clipped Sine Wave)	15pF		15pF		V
Load (CMOS)	10 KΩ // 10pF		10 KΩ // 10pF		
Load (Clipped Sine Wave)	0.5	2.5	0.5	2.5	ppm
Control Voltage Range (VCTCXO)	±5.0	±12.0	±5.0	±12.0	
Pulling Range (VCTCXO)	100	-	100	-	KΩ
Vc Input Impedance (VCTCXO)	-120		-120		
Phase Noise @ 19.2MHz	-140		-140		dBc / Hz
100 Hz	-148		-148		
1 KHz	-		-		
10 KHz	-	2	-	2	mSec
Start Time	-	-	-	-	
Tri-State	-	1.5	-	0.99	V
Disable	3.5	-	2.31	-	
Enable	-55	125	-55	125	°C
Storage Temp. Range					

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)	±0.05	±0.1	±0.14	±0.28	±0.37	±0.5
-10 ~ +60	○	○	○	○	○	○
-20 ~ +70	△	○	○	○	○	○
-40 ~ +85	x	x	x	○	○	○

○ : Available △: Conditional x : Not available

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