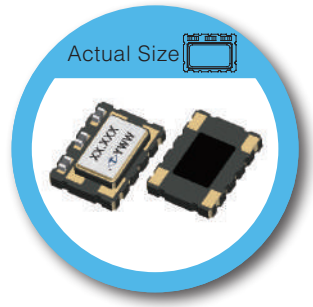
TT-K Type High Precision TCXO

7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator



RoHS Compliant

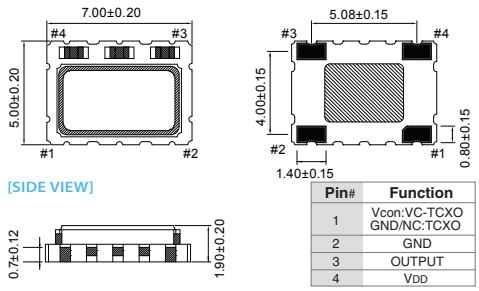
FEATURE

- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- High Precision and High Temperature for -40°C ~ +95°C, ±0.1ppm, -40°C ~ +105°C , ±0.2ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

TYPICAL APPLICATION

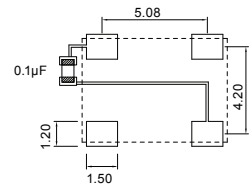
- Femtocell , Base Stations
- WLAN/WiMAX/WIFI, Wireless Communications

DIMENSION (mm)



Pin#	Function
1	Vcon:VC-TCXO GND/NC:TCXO
2	GND
3	OUTPUT
4	VDD

SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1μF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

Parameter		3.3 V		2.5V		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		10, 19.2, 20				
Frequency Tolerance*		–	±1.5	–	±1.5	ppm
Frequency Stability						
	Vs Supply Voltage (±5%) change	–	±0.1	–	±0.05	ppm
	Vs Load (±10%) change	–	±0.05	–	±0.05	
	Vs Aging (@1st year)	–	±1.0	–	±1.0	ppm / year
Supply Current (CMOS output)		–	7.5	–	7	mA
Supply Current (Clipped Sine Wave)		–	5.0	–	4.5	
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 @ 20 MHz	100 Hz	-130				dBc/Hz
	1 kHz	-148				
	10 kHz	-156				
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	±0.2	±0.28	±0.5	±2
-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.