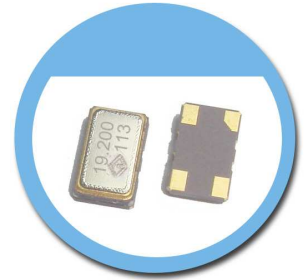


5.0 x 3.2 mm SMD High Precision Voltage Controlled Temperature Compensated Crystal Oscillator - TW Type

FEATURE

- Typical 5.0 x 3.2 x 1.55 mm ceramic SMD package.
- ± 0.28 ppm, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$; ± 0.1 ppm, $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.



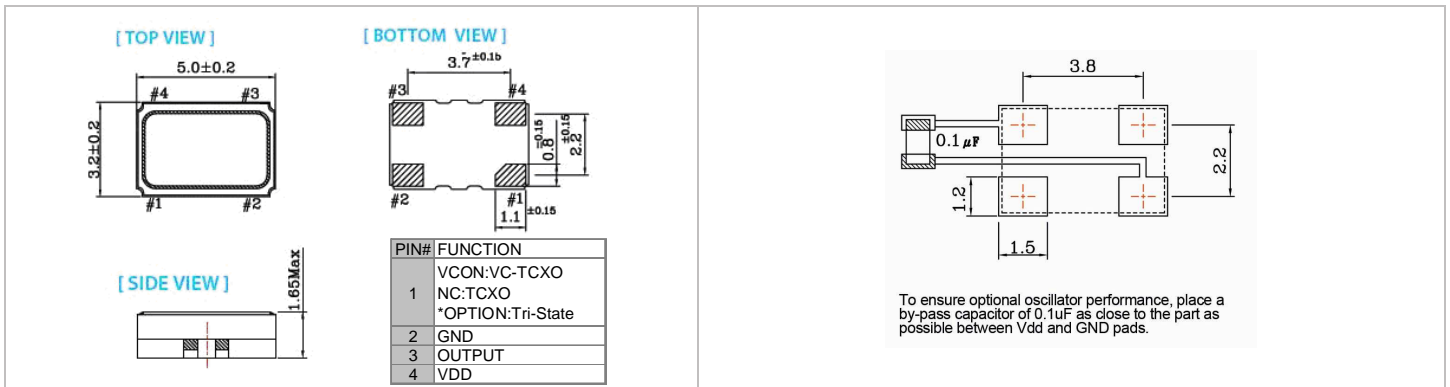
TYPICAL APPLICATION

- Base Stations, Stratum 3
- Femtocell

RoHS Compliant Standard

DIMENSION (mm)

SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	5.0V		3.3V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) 5%	4.75	5.25	2.97	3.63	V
Frequency Range	10	40	10	40	MHz
Standard Frequency (for CMOS)	10, 12.8, 19.2, 20, 26				
Standard Frequency (for Clipped Sine)	10, 12.8, 19.2, 20, 26				
Frequency Tolerance*	-	± 2.0	-	± 2.0	ppm
Frequency Stability					ppm
Vs Supply Voltage ($\pm 5\%$) change (CMOS)	-	± 0.2	-	± 0.2	
Vs Load ($\pm 10\%$) change	-	± 0.2	-	± 0.2	
Vs Aging (after 1 year)	-	± 1.0	-	± 1.0	ppm/year
Supply Current (CMOS output)	-	6	-	6	mA
Supply Current (Clipped Sine Wave)	-	3.5	-	3.5	
Output Level (CMOS)					V
Output High (Logic "1")	90% V _{DD}	-	90% V _{DD}	-	
Output Low (Logic "0")	-	10% V _{DD}	-	10% V _{DD}	%
Duty	45	55	45	55	
Output Level (Clipped Sine Wave)	0.8	-	0.8	-	Vp-p
Load (CMOS)	15pF		15pF		
Load (Clipped Sine Wave)	10K Ω /10pF		10K Ω /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	-	K Ω
Phase Noise @ 12.8 MHz					dBc/Hz
100 Hz	125		125		
1 KHz	145		145		
10 KHz	150		150		
Start Time	-	2	-	2	mSec
Tri-State (option)	Disable	-	0.3 V _{DD}	-	V
Enable	0.7 V _{DD}	-	0.7 V _{DD}	-	
Storage Temp. Range	-55	125	-55	125	$^{\circ}\text{C}$

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position

*Frequency at 25 $^{\circ}\text{C}$, 1 hour after reflow

Packing: Tape & Reel, 1000/3000 pcs per Reel.

FREQ. STABILITY vs. TEMP. RANGE

Temp. ($^{\circ}\text{C}$)	ppm			
	± 0.14	± 0.28	± 0.37	± 0.5
0~+55	O	O	O	O
-10~+60	O	O	O	O
-20~+70	O	O	O	O
-30~+85	O	O	O	O
-40~+85	X	O	O	O

* O: Available Δ : Conditional X: Not available