

Series VH5

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

FEATURE

- Typical 5.0 x 3.2 x 1.55 mm ceramic SMD package.
- ± 0.2 ppm, $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$; ± 0.05 ppm, $-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

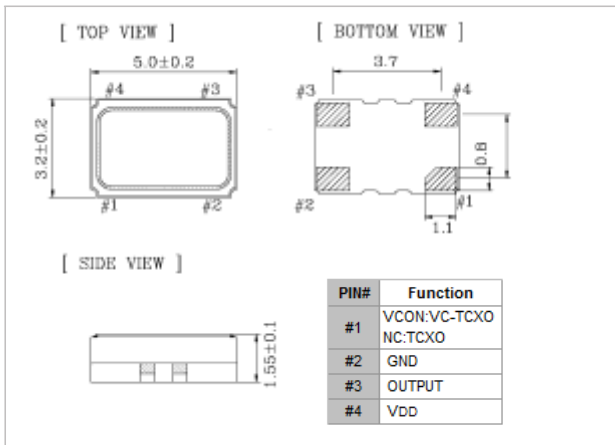


TYPICAL APPLICATION

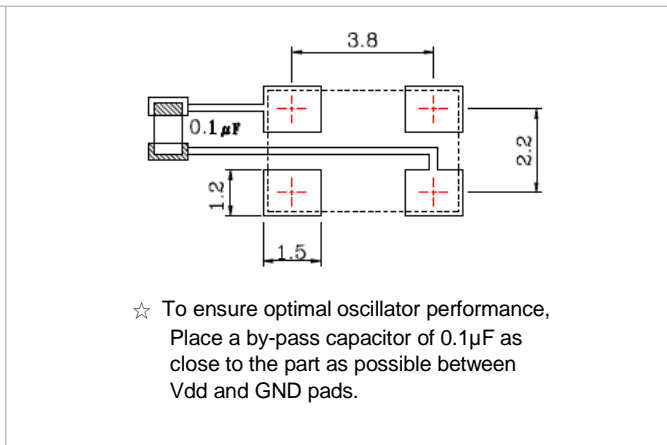
- Base Stations, Stratum 3
- Femtocell

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, 30.72				
Standard Frequency (for Clipped Sine)	10, 12.8, 19.2, 20, 26, 30.72				
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	
Supply Current (CMOS output)	-	6	-	6	mA
Supply Current (Clipped Sine Wave)	-	3.5	-	3.5	V
Output Level (CMOS)	90% VDD	-	90% VDD	-	
Output Level (Clipped Sine Wave)	0.8	-	0.8	-	
Output Level (Clipped Sine Wave)	0.8	-	0.8	-	Vp-p
Load (CMOS)	15pF		15pF		V
Load (Clipped Sine Wave)	10K Ω /10pF		10K Ω /10pF		
Control Voltage Range (VCTCXO)	0.5	2.5	0.5	2.5	ppm
Pulling Range (VCTCXO)	± 5.0	± 10.0	± 5.0	± 10.0	
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
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°C 1 hour after reflow

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

FREQ. STABILITY vs. TEMP. RANGE

$^{\circ}\text{C}$	ppm	± 0.05	± 0.1	± 0.2	± 0.28	± 0.5
		0~+55	O	O	O	O
-10~+60	O	O	O	O	O	
-10~+70	Δ	O	O	O	O	
-40~+85	X	X	Δ	O	O	

* O: Available Δ : Conditional X: Not available