Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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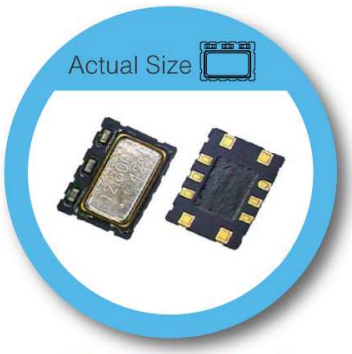
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

TS Type

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



RoHS Compliant

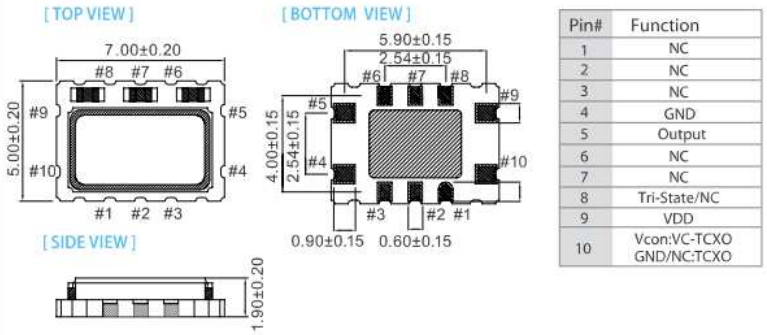
FEATURE

- 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

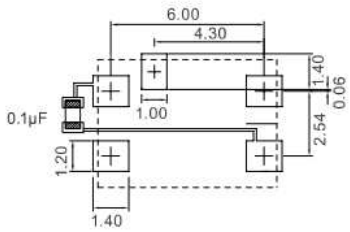
- Femtocell, Base Stations
- WLAN / WiMAX / WiFi, Wireless Communications
- Mobile Phone

DIMENSION (mm)



Pin#	Function
1	NC
2	NC
3	NC
4	GND
5	Output
6	NC
7	NC
8	Tri-State/NC
9	VDD
10	Vcon:VC-TCXO GND/NC:TCXO

SOLDER PAD LAYOT (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	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				
Frequency Tolerance*		±2.0		±2.0	ppm
Frequency Stability					
Vs Supply Voltage (±5%) change	-	±0.5	-	±0.5	ppm
Vs Load (±10%) change	-	±0.2	-	±0.2	ppm
Vs Aging	-	±1.0	-	±1.0	ppm
Supply Current (CMOS output)	-	6.0	-	6.0	mA
Supply Current (Clipped Sine Wave)	-	3.5	-	3.5	
Output Level (CMOS)					
Output Low (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	±12.0	±5.0	±12.0	ppm
Vc Input Impedance (VCTCXO)	100	-	100	-	KΩ
Phase Noise @ 19.2MHz					
100 Hz	-120		-120		dBc / Hz
1 KHz	-140		-140		
10 KHz	-148		-148		
Start Time	-	2	-	2	mSec
Tri-State					
Disable	-	1.5	-	0.99	V
Enable	3.5	-	2.31	-	
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	±0.14	±0.28	±0.37	±0.5
-10 ~ +60	○	○	○	○	○	○
-20 ~ +70	△	○	○	○	○	○
-40 ~ +85	×	×	×	○	○	○

○ : Available △: Conditional × : Not available

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