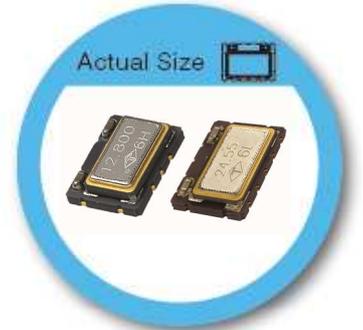


# TS Type

## 7.0x5.0 mm SMD High Precision Voltage Controlled



### FEATURE

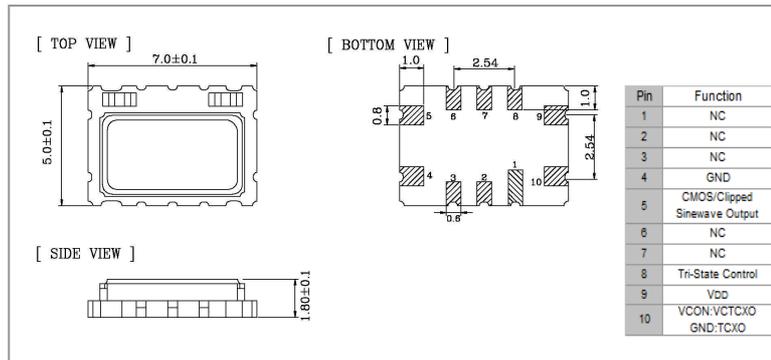
- Typical 7.0x5.0x1.85 mm ceramic SMD package.
- High Precision for -40 °C~+85 °C,  $\pm 0.28$ ppm
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional

### APPLICATION

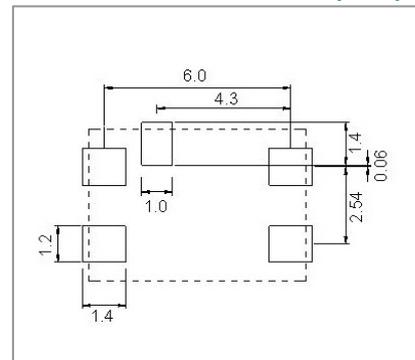
- Femtocell, Base Stations
- WLAN/WiMAX/WiFi, Wireless Communications
- Mobile Phone

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	3.135	3.465	V
Frequency Range	5	40	5	40	MHz
Standard Frequency (for CMOS)	5, 6.4, 8, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Standard Frequency (for Clipped Sine)	8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				ppm
Frequency Tolerance*	-	$\pm 2.0$	-	$\pm 2.0$	
Frequency Stability					ppm
Vs Supply Voltage ( $\pm 5\%$ ) change	-	$\pm 0.5$	-	$\pm 0.5$	
Vs Load ( $\pm 10\%$ ) change	-	$\pm 0.2$	-	$\pm 0.2$	
Vs Aging	-	$\pm 1.0$	-	$\pm 1.0$	mA
Supply Current (CMOS output)	-	6	-	6	
Supply Current (Clipped Sine Wave)	-	3.5	-	3.5	V
Output Level (CMOS)					
Output High (Logic "1")	90%VDD	-	90%VDD	-	
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)	10K $\Omega$ /10pF		10K $\Omega$ /10pF		
Control Voltage Range (VCTCXO)	0.5	2.5	0.5	2.5	V
Pulling Range (VCTCXO)	$\pm 5.0$	$\pm 12.0$	$\pm 5.0$	$\pm 12.0$	ppm
Vc Input Impedance (VCTCXO)	100	-	100	-	K $\Omega$
Phase Noise @ 12.8 MHz					dBc / Hz
100 Hz	-120		-120		
1 KHz	-140		-140		
10 KHz	-148		-148		mSec
Start Time	-	2	-	2	
Tri-State					V
Disable	-	0.3VDD	-	0.3VDD	
Enable	0.7VDD	-	0.7VDD	-	°C
Storage Temp. Range	-55	125	-55	125	

Standard frequencies are frequencies which the crystal has been designed and does no 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

Temp (°C)	ppm					
	$\pm 0.05$	$\pm 0.1$	$\pm 0.14$	$\pm 0.28$	$\pm 0.37$	$\pm 0.5$
0~+55	○	○	○	○	○	○
-10~+60	○	○	○	○	○	○
-20~+70	△	○	○	○	○	○
-40~+85	X	X	X	○	○	○

\* O: Standard    △: Available (case by case) X: Not available

Specifications subject to change without notice