

The VC-TXO-23SM is a VC (Voltage Controlled) TCXO (Temperature Compensated Crystal Oscillator) featuring tight stability of  $\pm 2.5$  ppm with a voltage control tuning range of  $\pm 9$  ppm minimum. The small subminiature SMD ceramic package measures 3.2 x 2.5 x 0.9 mm and is ideal for wireless communications applications.

Request a Sample

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- Low profile
- 3.2 x 2.5 mm Footprint
- Highly stable output
- PbFree/RoHS Compliant

Parameters	Conditions	VC-TXO-23SM			Units
		MIN	TYP	MAX	
Frequency Range		10.000		40.000	MHz
Initial Frequency Tolerance	+25°C $\pm 2^\circ\text{C}$			$\pm 1.5$	PPM
Frequency Stability	Option A -10 ~ +70°C			$\pm 2.5$	PPM
	Option B -30 ~ +75°C			$\pm 2.5$	PPM
	Option C -30 ~ +85°C			$\pm 5.0$	PPM
Input Voltage Change	$\pm 3.0$ VDC $\pm 5\%$			$\pm 0.3$	PPM
Load Change	10k $\Omega$ $\pm 10\%$ / 10pF $\pm 10\%$			$\pm 0.2$	PPM
Aging	Per Year @ +25°C $\pm 3^\circ\text{C}$			$\pm 1.0$	PPM
Storage Temperature		-40		+85	$^\circ\text{C}$
Supply Voltage		+2.85	+3.0	+3.15	V DC
Input Current	Without Load			1.5	mA
Output Level		0.8			Vp-p
Output Load	10k $\Omega$ // 10pF				
Output Waveform	Clipped sine wave (DC-Coupling)				
Frequency Control Range	+1.5 VDC $\pm 1\text{V}$ Positive Slope	$\pm 9$		$\pm 15$	PPM
Control Voltage		+0.5	+1.5	+2.5	VDC
SSB Phase Noise	-130 dBc/Hz at 1 KHz offset				
Startup Time				3.5	ms
IR Reflow Resistance				$\pm 1.0$	PPM
Reflow Condition	+250°C $\pm 10^\circ\text{C}$ for 10 seconds				

### Part Numbering Guide: VC-TXO-23SM-192-B

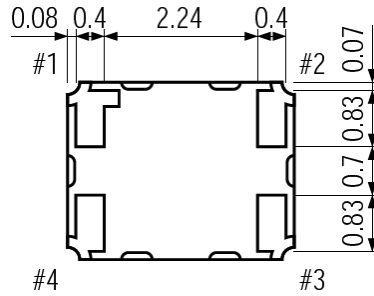
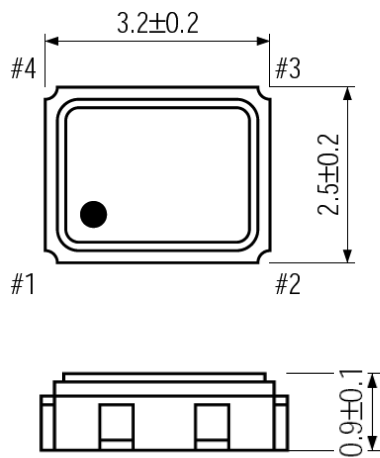
Series	-	Frequency Abbreviations	-	Frequency Stability
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VC-TXO-23SM

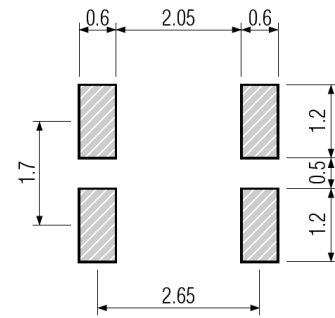
100 = 10.000 MHz  
 192 = 19.200 MHz  
 196.8 = 19.680 MHz  
 198 = 19.800 MHz  
 200 = 20.000 MHz  
 260 = 26.000 MHz

A =  $\pm 2.5$  ppm -10 ~ +75°C  
 B =  $\pm 2.5$  ppm -30 ~ +75°C  
 C =  $\pm 5.0$  ppm -30 ~ +85°C

**Package Dimensions (mm)**

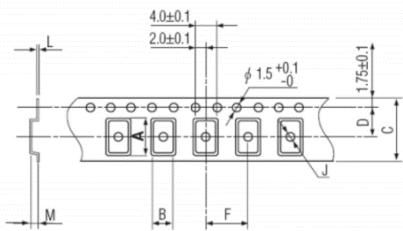


Pin Connections	
#1	V Control
#2	Ground
#3	Output
#4	+VDC



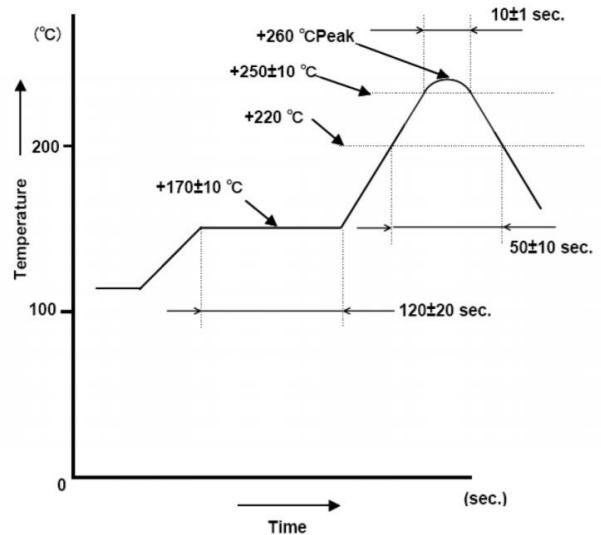
**Figure 2) Land Pattern**

**Figure 1) Top, Side, and Bottom views**



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
3.5	2.8	8.0	3.5	4.0	1.1	0.25	1.0	180	1000

**Figure 3) Pocket Tape Dimensions**



**Figure 4) Suggested Reflow Profile**

Package Data	
Item	Description
Lid	Metal
Base	Ceramic
Sealing	Seam
Terminal	Tungsten (metalized)
Plating	Gold/Nickel (Surface)/(Under)
RoHS	Compliant (Pb Free)