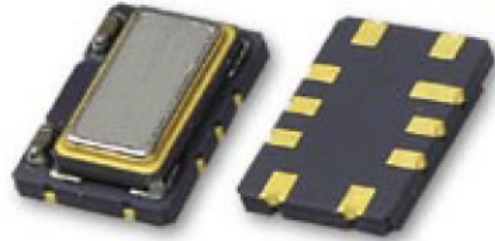


## Features

Frequency Range 5 to 26 MHz  
 7mm x 5mm x 1.85mm ceramic SMD  
 +/- 4.6 ppm total stability over 20 years  
 CMOS or clipped sine wave options  
 Tri-state Enable / Disable Function  
 +/- 0.37 ppm from -40 to +85 centigrade degree  
 +/- 0.28 ppm from -20 to +70 centigrade degree

## Picture of Part



## Typical Applications

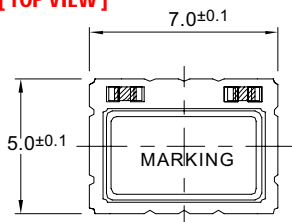
Base stations  
 10 G-bit ethernet  
 SONET  
 GSM, CDMA, 3G, and 4G cellular

## Description

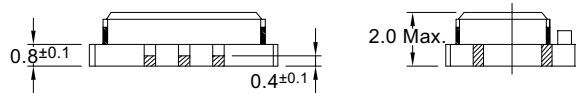
The VCTCXO3404 family offers low noise compensation techniques combined with aggressive conditioning processes resulting in outstanding long term stability, tightly distributed performance parameters, and superior long term reliability.

## Physical Dimensions

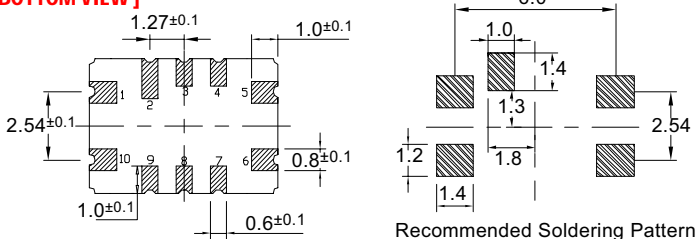
### [TOP VIEW]



### [SIDE VIEW]



### [BOTTOM VIEW]



Recommended Soldering Pattern

## Pin Connections

Pad	Function
1	VCON : VC-TCXO NC : TCXO
2	NC
3	NC
4	NC
5	GND
6	CMOS/ Clipped Sinewave Output
7	NC
8	NC
9	Tri-State Control*
10	VDD

## Specification

VCTCXO Specification		Sym.	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
<b>Operational Frequency Range</b>		$f_0$		5		26	MHz	
	Load					15	pF	
	H - level voltage	$V_H$		0.9Vcc			V	
	L - level voltage	$V_L$				0.1Vcc	V	
	Rise & Fall time						ns	
	Duty cycle			45		55	%	
Clipped Sine-wave ONLY	Level	L		0.8			pk-pk	
	Load Resistance	$R_L$			10		Kohm	
	Load Capacitance	$C_L$			10		pF	
<b>Power supply</b>								
Voltage		$V_{cc}$		3.135	3.300	3.465	V	5.0 V option available
Current consumption		$I_{cc}$				6.0 3.5	mA	square wave clipped sine wave
<b>Frequency control*</b>								
Control voltage range		$V_c$		0.5	1.5	2.5	V	Positive tuning slope
Tuning range				+/- 5			ppm	
Vc Input Impedance						100	Kohm	
<b>Frequency stability</b>								
vs. temperature			-40°C to +85°C, ref 25°C	-0.370		+0.370	ppm	
vs. 5% change in supply voltage			ref Vcc typ.	-0.300		+0.300	ppm	
Tolerance at 25C				-2.000		+2.000	ppm	Frequency 1 hr after reflow
SSB Phase noise @12.8 MHz CMOS typical			100 Hz			-120	dBc/Hz	
			1000 Hz			-140		
			10 kHz			-148		
		Tri-state Output OFF				0.3Vcc		
		Enable / Disable Output ON		0.7Vcc				
Total Tolerance	Over 20 years		Projected after 30 days operation	-4.600		+4.600	ppm	See NOTE 1 on Page 3
<b>Environmental, mechanical conditions.</b>								
Operating temperature range		<b>-40°C to +85°C maximum range available that is standard</b>						
Storage temperature range		<b>-55°C to +125°C</b>						
Mechanical shock								
Vibration								
Soldering								

## Ordering Information

VCTCXO3404-XX.XXXXXX-W-Y-Z

1. Field " XX.XXXXXX " is the Output Frequency to six decimals in MHz
2. Field " W " is Operating Temperature Range and Freq. Stability :
  - a. " 0 " for -20 °C to +70 °C and +/- 0.280 ppm
  - b. " 1 " for -40 °C to +85 °C and +/- 0.370 ppm
  - c. " 2 " for -40 °C to +85 °C and +/- 0.500 ppm

\*\*\*NOT all choices in section 2 available : Must consult factory for specific frequency and stability combination.

3. Field " Y " is Power Supply Option :
  - a. " 0 " for 5V +/- 5%
  - b. " 1 " for 3.3V +/- 5%
4. Field " Z " is Output Waveform Option :
  - a. " 0 " for clipped sine wave
  - b. " 1 " for cmos square wave

## Part Number Example

VCTCXO3404-10.000000-1-1-1

10.000000 MHz Operating Frequency

Operating Temperature of -40 °C to +85 °C

+/- 0.370 ppm Frequency Stability

3.3 volt supply

cmos output

NOTE 1 : Total Frequency Tolerance is inclusive of calibration at 25 °C , change over temperature, change with 5% supply variation, change with 5% load change, change with reflow soldering, and 20 year aging.