

Features

- Frequency Range 6.4 to 52 MHz
- Frequency stability to +/- 0.25 ppm
- Total Stability +/- 4.6 ppm over 20 years
- Tri-state Enable / Disable
- Less than 1 ps integrated jitter
- Industry Standard 5x7mm ceramic package

Typical Applications

- Femtocell base stations
- Land mobile radio
- Wireless local loop
- GPS Timing / Synchronization
- Satellite Communications
- Stratum 3 telecomm networks
- Test and Measurement

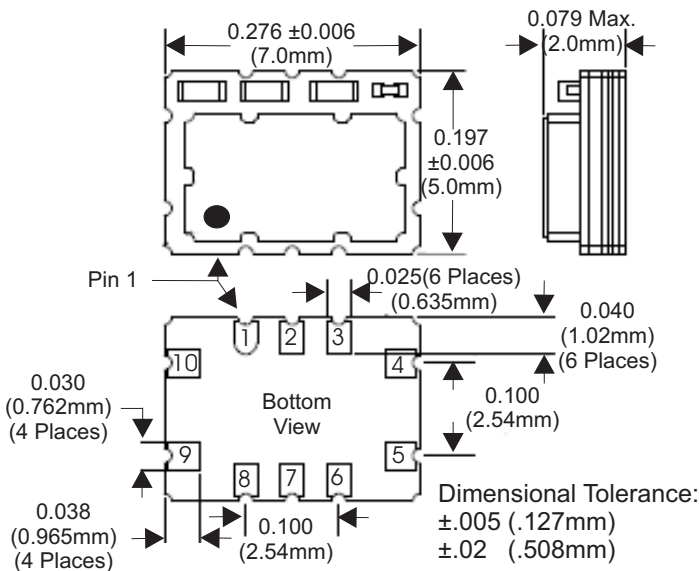
Picture of Part



Description

The TCXO3402 family offers low noise and jitter analog compensation techniques combined with low aging processing methods to deliver outstanding long term frequency stability over 20 years in an industry standard 5x7mm package.

Physical Dimensions



Pin Connections

1	Do not connect
2	Do not connect
3	Do not connect
4	Ground
5	Output
6	Do not connect
7	Do not connect
8	Tri-state Enable / Disable
9	Supply, Vcc
10	Voltage Control (VCTCXO) N/C (TCXO)

Specification

TCXO Specification		Sym.	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Operational Frequency Range		f_0		6.4		52	MHz	Custom designs to 50 MHz
HCMOS compatible option	Load					15	pF	
	H - level voltage	V_H		0.9Vcc			V	
	L - level voltage	V_L				0.1Vcc	V	
	Rise & Fall time					8	ns	
	Duty cycle			45	50	55	%	
Clipped Sine-wave option	Level	L		0.8			pk-pk	
	Load Resistance	R_L			10		Kohm	
	Load Capacitance	C_L			10		pF	
Power supply								
Voltage		V_{cc}		3.135	3.300	3.465	V	
Current consumption		I_{cc}			6	10	mA	
Frequency control*								
Control voltage range		V_c		0.3	1.65	3.00	V	Positive tuning slope
Tuning range				+/- 10			ppm	Other tuning ranges available
Linearity						+/- 5	%	
Frequency stability								
vs. temperature			-40°C to +85°C, ref 25°C	-0.250		+0.250	ppm	For certain frequencies
vs. 5% change in supply voltage			ref Vcc typ.	-0.200		+0.200	ppm	
Total Frequency Tolerance				-4.6		+4.6	ppm	*** NOTE 1 on Page 3
SSB Phase noise			10 Hz		-80	-70	dBc/Hz	
			100 Hz		-110	-100		
			1 kHz		-135	-130		
			10 kHz		-150	-145		
			100 kHz		-150	-150		
Integrated Phase Jitter		From	12Khz to 20MHz		0.3	1.0	ps rms	
Enable	PAD 8		Enable voltage high	70% Vcc				Open Circuit same as enable high Disable : no RF output on Pad 5
Disable			Disable voltage low			30% Vcc		
Environmental, mechanical conditions.								
Operating temperature range		-40°C to +85°C maximum range available that is standard						
Storage temperature range		-55°C to +105°C						
Mechanical shock		Per MIL-STD 202 , Method 2002.4, Test Condition B						
Vibration		Per MIL-STD 883E , Method 207.3, Test Condition A						
Soldering		Maximum temperature 260C. Maximum time above 220C : 60 seconds						

Ordering Information

TCXO3402-XX.XXXXXX-V-W-Y-Z

1. Field " XX.XXXXXX " is the Output Frequency to six decimals in MHz
2. Field " V " is for Frequency Tuning range :
 - a. " 0 " is for No Frequency Adjust (clock TCXO)
 - b. " 1 " is for +/- 5 ppm minimum
 - c. " 2 " is for +/- 8 ppm minimum
 - d. " 3 " is for +/- 10 ppm minimum
3. Field " W " is Operating Temperature Range and Freq. Stability :
 - a. " 0 " for 0°C to +70°C and +/- 0.250 ppm
 - b. " 1 " for 0°C to +70°C and +/- 0.500 ppm
 - c. " 2 " for 0°C to +70°C and +/- 1.000 ppm
 - d. " 3 " for -40°C to +85°C and +/- 0.250 ppm
 - e. " 4 " for -40°C to +85°C and +/- 0.500 ppm
 - f. " 5 " for -40°C to +85°C and +/- 1.000 ppm

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

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

Part Number Example

TCXO3402-10.000000-1-3-1-1

10.000000 MHz Operating Frequency

+/- 5 ppm minimum pull

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

+/- 250 ppb Frequency Stability

3.3 volt supply

Square wave output

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

Product Performance Graphs

