

TCXO3411

Extreme shock, vibration, and low G-sensitivity TCXO

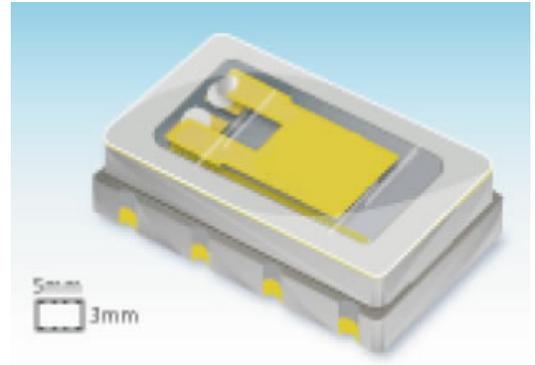
Features

Frequency Range 10 to 50 MHz
Rugged 5mm x 3.2mm x 2.0mm SMD
Can withstand up to 50000g acceleration
G-sensitivity as low as 0.7 ppb/G
Excellent phase noise

Typical Applications

Satellite Communications, WiMAX, WLAN, Stratum3, Femtocell
Mobile radio
GPS Timing / Synchronization

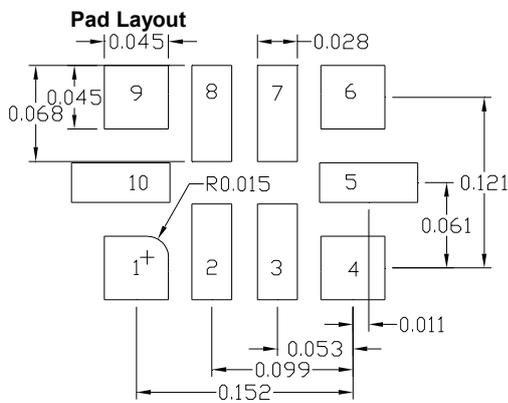
Picture of Part



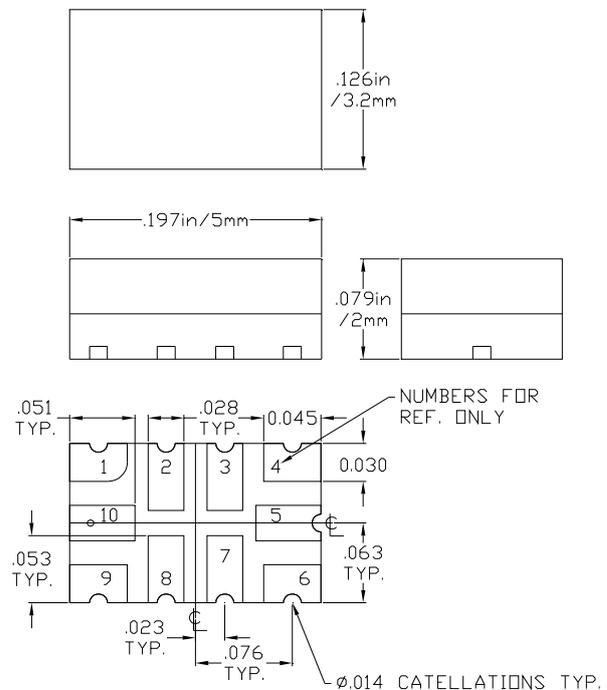
Description

The TCXO3411 represents a new generation of miniaturized SMD designs. Capable of withstanding high shock and vibration along with extreme acceleration. The 3411 serves as a highly stable low noise reference oscillator for critical timing applications.

Physical Dimensions & Pin Connections



- 1 - EFC
- 2 - Vref
- 3 - N/C or Low Phase Noise Ca
- 4 - 0V, Ground
- 5 - Tri-State (enable Hi or float)
- 6 - output
- 7 - N/C, Internal Use Only
- 8 - N/C, Internal Use Only
- 9 - Supply Voltage
- 10 - N/C, Internal Use Only



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Specification

TCXO Specification	Sym.	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	f_0		10		50	MHz	
HCMOS compatible option	Load				15	pF	
	H - level voltage	V_H	2.8			V	
	L - level voltage	V_L			0.2	V	
	Rise & Fall time					ns	
	Duty cycle		45	50	55	%	
Clipped Sine-wave option	Level	L				pk-pk	
	Load	R_L		10		Kohm	
	Load	CL		10		pF	
Power supply							
Voltage	V_{cc}		3.15	3.3	3.45	V	
Current consumption	I_{cc}				6 3.5	mA	CMOS Clipped sine wave
Frequency control*							
Control voltage range	V_c		0		3.300	V	Positive tuning slope
Tuning range				+/- 8.0		ppm	
Reference voltage Output							
Frequency stability							
vs. temperature		-55°C to +95°C, ref 25°C	-2.0		+2.0	ppm	
vs. 5% change in supply voltage		ref V_{cc} typ.				ppb	
SSB Phase noise For 10 MHz HCMOS Typical		10 Hz		-95		dBc/Hz	for 10 MHz HCMOS Typical
		100 Hz		-120			
		1 kHz		-140			
		10 kHz		-150			
		100 kHz		-155			
Allan variance		1 s				e-12	
Aging		Projected aging after 30 days operation					
	Per Year				+/-1.0	ppm	
Environmental, mechanical conditions.							
Operating temperature range	-55°C to +95°C maximum range available that is standard						
Storage temperature range	-55°C to +105°C						
Mechanical shock	Per MIL-STD 202G , Method 213, Condition F						
Vibration	Per MIL-STD 202G , Method 214, Condition I-F						

Ordering Information

TCXO3411- XX.XXXXXX-W-Y

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 -10 °C to +60 °C and +/- 0.300 ppm
 - b. " 1 " for -20 °C to +70 °C and +/- 0.500 ppm
 - c. " 2 " for -20 °C to +70 °C and +/- 0.500 ppm
 - d. " 3 " for -40 °C to +85 °C and +/- 0.500 ppm
 - e. " 4 " for -40 °C to +85 °C and +/- 1.000 ppm
 - f. " 5 " for -55 °C to +95 °C and +/- 2.000 ppm
 - g. " 6 " for -20 °C to +70 °C and +/- 0.280 ppm (10 and 20 MHz only)
 - h. " 7 " for -40 °C to +85 °C and +/- 0.280 ppm (10 and 20 MHz only)
3. Field " Y " 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

TCXO3411-A-10.000000-5-1

10.000000 MHz Operating Frequency

Operating Temperature of -55 °C to +95 °C

+/- 2.000 ppm Frequency Stability

cmos output

Product Performance Graphs

Frequency vs Temperature

