

VFTX1412C

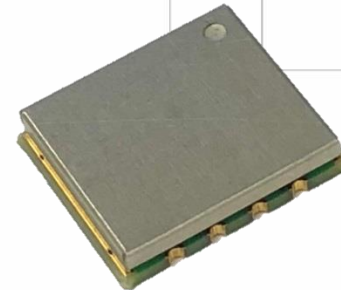
VCTCXO Low Noise, SMD, LVCMOS

Features

- Output Frequency to 165 MHz
- Ultra low jitter and phase noise
- Meets Wander generation TDEV/MTIE for ITU-T G.8262 EEC options 1 & 2

Applications

- RADAR
- SONET / SDH / ATM
- 10 Gigabit Ethernet
- Digital Wireless Reference



Dimensions: 14 x 12 x 5 mm

Description

The VFTX1412C is a low noise TCXO which provides an LVCMOS output frequency up to 165 MHz. The temperature stability is less than 1 ppm over the industrial range, -40°C to +85°C. The VFTX1412C is available in a 14 mm x 12 mm surface mount package.

Ordering Options Table

Model	Stability	Frequency											
VFTX1412C	— <u> L </u> —	<u> XXX.XXX </u> MHz											
	↓	↓											
	<table border="1"> <thead> <tr> <th>Code</th> <th>Stability</th> </tr> </thead> <tbody> <tr> <td>blank</td> <td>1.0 ppm (std)</td> </tr> <tr> <td>L</td> <td>0.5 ppm</td> </tr> </tbody> </table>	Code	Stability	blank	1.0 ppm (std)	L	0.5 ppm	<table border="1"> <thead> <tr> <th>Standard Frequencies</th> </tr> </thead> <tbody> <tr> <td>49.152MHz</td> </tr> <tr> <td>100.000MHz</td> </tr> <tr> <td>125.000MHz</td> </tr> <tr> <td>156.250MHz</td> </tr> </tbody> </table>	Standard Frequencies	49.152MHz	100.000MHz	125.000MHz	156.250MHz
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blank	1.0 ppm (std)												
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Standard Frequencies													
49.152MHz													
100.000MHz													
125.000MHz													
156.250MHz													

Custom frequencies are available. Consult factory.

Part Number Examples:

VFTX1412C-L-125.000MHz
or
VFTX1412C-125.000MHz



Electrical Specifications

Parameter	Symbol	Conditions & Remarks	Min	Typical	Max	Units
Frequency	F_{OUT}		10	-	165	MHz
Initial Accuracy		+25°C, with Vc (pin #1) floating. (See note 1)	-	-	1	ppm
Frequency Stability	$\Delta F/F$	Vs. Operating temperature (See options table)	-	-	1.0	ppm
		Vs. Supply voltage	-	±0.1	-	ppm/V
		Vs. Aging (first year)	-	±1.0	-	ppm
		Vs. Aging (10 years)	-	±3.0	-	ppm
Operating Temp Range	T_A		-40	-	+85	°C
Supply Voltage	V_{CC}		3.15	3.3	3.45	V
Input Current	I_{CC}		-	-	50	mA

Output Characteristics

Output waveform		LVCMOS				
Output levels	V_{OH} V_{OL}	Load = 10KΩ // 8pf	0.9 V_{CC} 0	- -	V_{CC} 0.1 V_{CC}	V
Duty Cycle			45	-	55	%
Rise/Fall time	T_R / T_F	100 Mhz output	-	1	-	ns
SSB Phase Noise (100 MHz)		100Hz	-	-112	-	dBc/Hz
		1kHz	-	-135	-	
		10kHz	-	-152	-	
		100kHz	-	-160	-	
		1Mhz	-	-165	-	
Start-up time			-	2	3	sec

Electronic Frequency Control (EFC)

Control Voltage	V_C		0	-	3.3	V
APR			±5	-	-	ppm
Deviation slope		Positive, monotonic				
Linearity			-	-	10	%
Input Impedance			10	-	-	KΩ
Modulation BW		3 dB bandwidth	7	-	-	Hz

Note 1. This product comes standard with voltage tuning (EFC). If EFC is not desired the user should float pin 1 in their application. The initial accuracy is the frequency tolerance when no tuning is required. Consult factory for additional accuracy options.

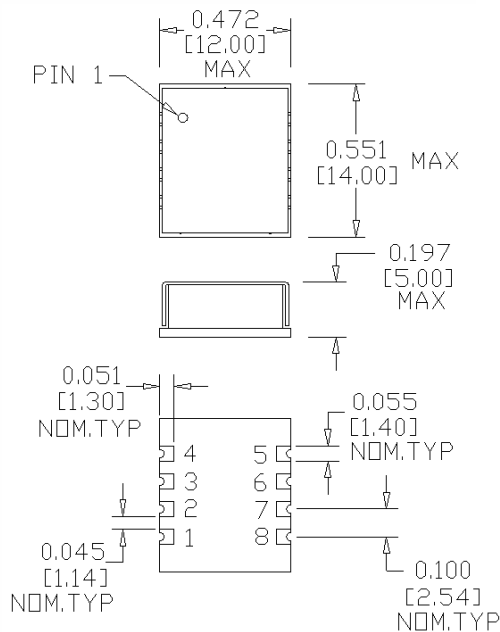
Absolute Maximum Ratings

Parameter	Symbol	Conditions & Remarks	Min	Typical	Max	Unit
Supply Breakdown Voltage	V_{CC}		-0.5	-	+4.6	V
Storage Temperature	T_S		-40	-	+85	°C
Control Voltage	V_C		-0.5	-	+4.0	V

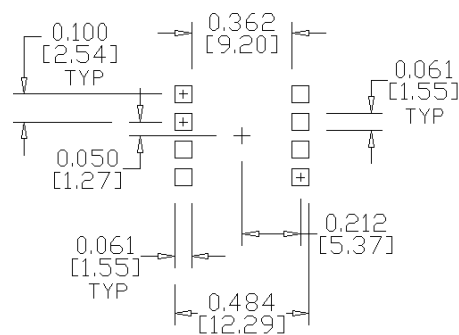
Mechanical and Environmental

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	Per MIL-STD-883, Method 2007, Condition A
Soldering Conditions	260°C for 10s max
Hermetic Seal	Leak rate less than 5×10^{-8} atm.cc/s of helium (crystal only)
Termination	Gold flash
Marking	Laser engraved or epoxy ink

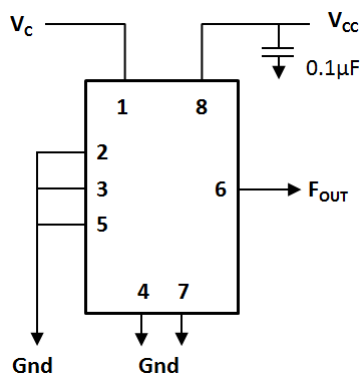
Mechanical Specifications



Recommended Land Pattern (Top view)



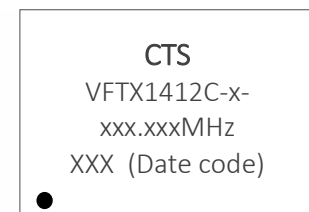
Connection Diagram



Pin Assignments

Pin #	Connection
1	V_C
2	Ground
3	Ground
4	Ground
5	Ground
6	F_{OUT}
7	Ground
8	V_{CC}

Product Marking



This product is specified for use only in standard commercial applications. Supplier disclaims all express and implied warranties and liability in connection with any use of this product in any non-commercial applications or in any application that may expose the product to conditions that are outside of the tolerances provided in its specification.