

VFTX1412P

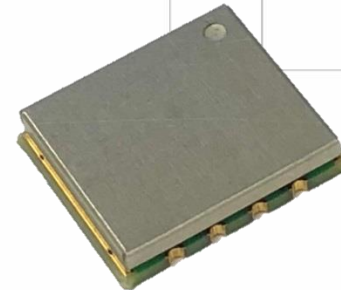
VCTCXO Low Noise, SMD, LVPECL

Features

- Output Frequency to 165 MHz
- 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 VFTX1412P is a low noise TCXO which provides an LVPECL output frequency up to 165 MHz. The temperature stability is less than 1 ppm over the industrial range, -40°C to +85°C. The VFTX1412P is available in a 14 mm x 12 mm surface mount package.

Ordering Options Table

Model	Stability	Frequency											
VFTX1412P	<u> </u> <u>X</u> <u> </u>	<u>XX.XXX</u> MHz											
	↓	↓											
	<table border="1"> <thead> <tr> <th>Code</th> <th>Stability</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0.5 ppm</td> </tr> <tr> <td>B</td> <td>1.0 ppm</td> </tr> </tbody> </table>	Code	Stability	A	0.5 ppm	B	1.0 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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Standard Frequencies													
49.152MHz													
100.000MHz													
125.000MHz													
156.250MHz													

Custom frequencies are available. Consult factory.

Example: VFTX1412P-A-125.000MHz



Electrical Specifications

Parameter	Symbol	Conditions & Remarks	Min	Typical	Max	Units
Frequency	F_{OUT}		10	-	165	MHz
Initial Accuracy		@25°C, V_C floating	-	100	300	ppb
Frequency Stability	$\Delta F/F$	Vs. Operating temperature (See options table)	-	0.5	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}		-	-	100	mA

Output Characteristics

Output waveform	LVPECL					
Output levels	V_{OH} V_{OL}	50Ω to $V_{CC}-2V$ or Thevenin equivalent	$V_{CC}-0.95$ $V_{CC}-1.65$	- -	$V_{CC}-0.85$ $V_{CC}-1.53$	V
Duty Cycle			45	-	55	%
SSB Phase Noise (@ 156.25 MHz)		100Hz	-	-100	-	dBc/Hz
		1kHz	-	-130	-	
		10kHz	-	-146	-	
		100kHz	-	-153	-	
		1Mhz	-	-160	-	
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	10	-	-	Hz

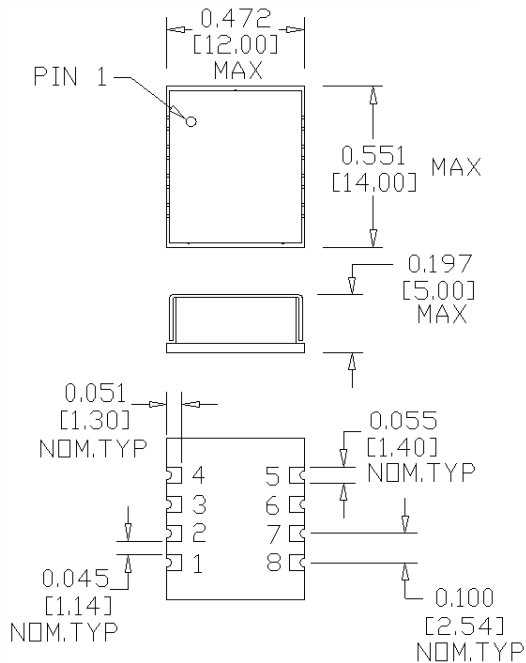
Absolute Maximum Ratings

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

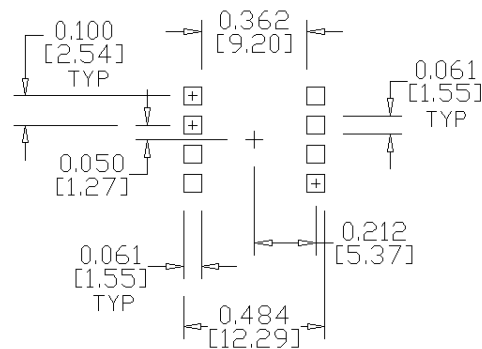
Mechanical and Environmental

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

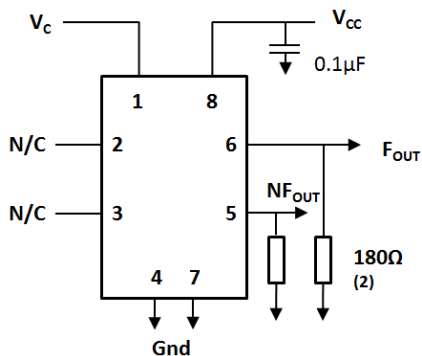
Mechanical Specifications



Recommended Land Pattern (Top view)



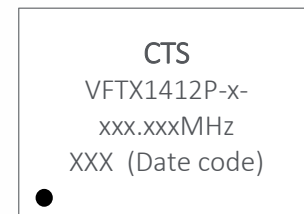
Connection Diagram



Pin Assignments

Pin #	Connection
1	V _C
2	N/C
3	N/C
4	Ground
5	NF _{OUT}
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.