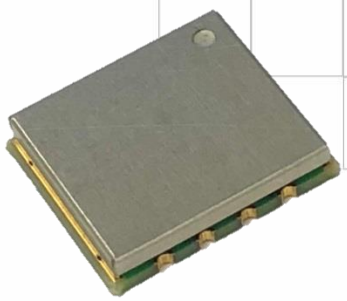
VFTX1412P

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



Dimensions: 14 x 12 x 5 mm

Applications

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

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 —	L —	XXX.XXXMHz

Code	Stability
blank	1.0 ppm
L	0.5 ppm

Standard Frequencies
49.152MHz
100.000MHz
125.000MHz
156.250MHz

Custom frequencies are available. Consult factory.

Part Number Examples:

VFTX1412P-L-125.000MHz
or
VFTX1412P-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)	-	-	1.0	ppb
Frequency Stability	ΔF/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

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.

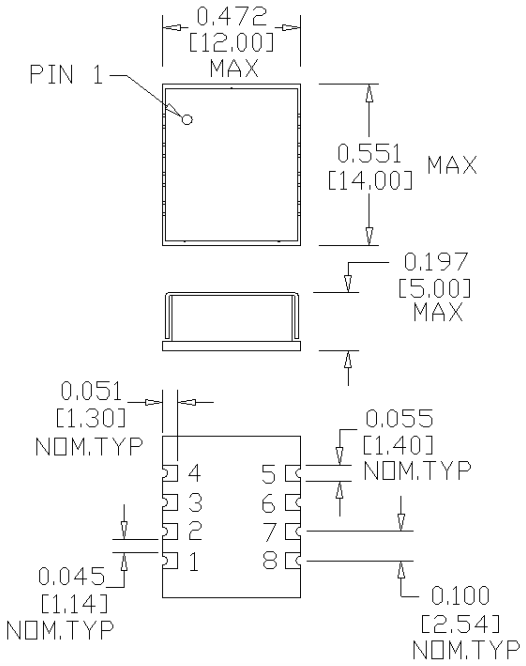
Absolute Maximum Ratings

Parameter	Symbol	Conditions & Remarks	Min	Typical	Max	Unit
Supply Breakdown Voltage	Vcc		-0.5	-	+4.6	V
Storage Temperature	Ts		-40	-	+85	°C
Control Voltage	V_C		-0.5	-	+4.0	V

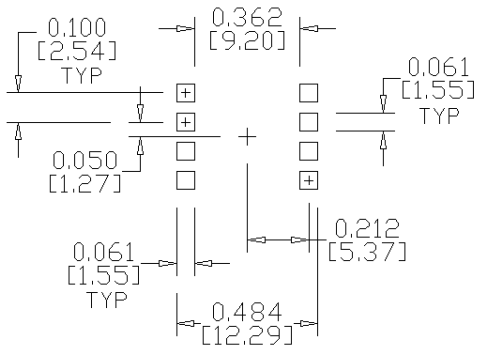
Mechanical and Environmental

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 $5x10^{-8}$ atm.cc/s of helium (crystal only)
Termination	Gold flash
Marking	Laser engraved or epoxy ink

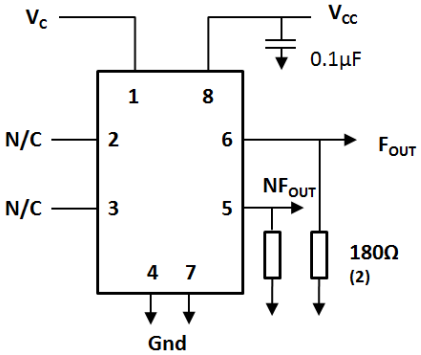
Mechanical Specifications



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

CTS
VFTX1412P-x-
xxx.xxxMHz
XXX (Date code)
●