



FTVC1 Extremely Low Phase Noise High Reliability VCXO

Fre-tech

Features

- Screening Level: MIL-PRF-55310D Class B or Class S
- Absolute Pull Range (APR) to ± 1000 ppm
- Fundamental (No Multiplication)
- High Shock Resistance (meet 1000g shock)
- Extremely Low Phase Noise and Jitter
- Sinewave output
- 17x14mm SMD package

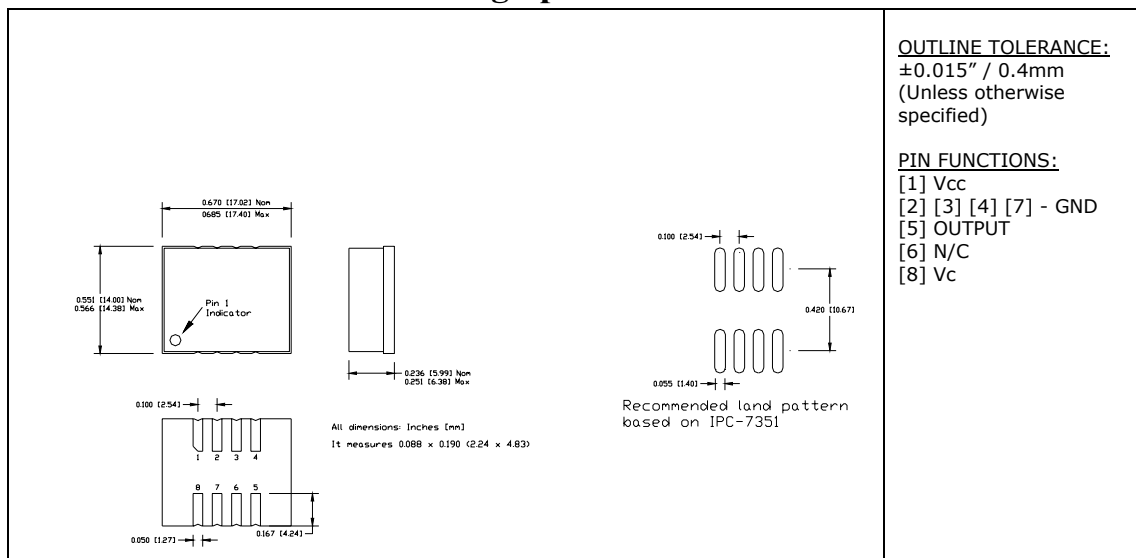
Applications

- Fiber Channel; ; Infiniband; Network Processors; SONET/SDH
- Military /Space application

Creating a Part Number

How to create a part number, please contact Fre-tech by e-mail sales@fre-tech.com.

Drawing Specification



Electrical Parameters

Parameter		Symbol	Value			Unit		
Operating Temperature Range		To	-40 to +85			°C		
Storage Temperature Range		Tst	-55 to +90			°C		
Supply Voltage		Vcc	-0.5 to 5.5			V		
Control Voltage		Vc	-0.5 to 6.0			V		
Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit		
Nominal Frequency	Fo	See Note below	10		260	MHz		
Supply Voltage	Vcc	Code 0 Code A	4.75 3.135	5.0 3.3	5.25 3.465	V		
Supply current	Icc	No load, Vcc=3.3V 100MHz		60	165	mA		
Output Logic Type				Sine				
Load		Internally AC coupled	45	50	55	Ohm		
Harmonic	Ph				-25	dBc		
Sub-Harmonics			None					
Output Power	Po	Into 50 ohm,5V 3.3V	7 5	10 7		dBm		
Jitter	Integrated, RMS	J	Integrated from Phase Noise, 12 KHz to 20 MHz RMS			0.1	0.15	ps
			100Hz to 80KHz,RMS				0.5	ps
			50 KHz to 80 MHz			0.2		ps
	Wavecrest characterized	J	Random period,			2.5		ps
			Accumul., pk-to-pk			17		ps
Determin.			0			ps		
Phase Noise (10MHz,5V -100dBc/Hz@10Hz;-130 dBc/Hz@100Hz;-155dBc/Hz @1KHz;-165dBc/Hz@10KHz -170dBc/Hz@100KHz)	£(Δf)	100 MHz, 3.3V APR 32 ppm or less	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz		-86 -115 -146 -170 -173 -175	-80 -110 -140 -168 -170 -172	dBc/Hz	
Frequency Stability, usually not specified – unless necessary, APR is specified to incorporate stability	ΔF/F	Overall, including temperature, aging 10 years, shock and vibration @Vc=Vcc/2; APR 50 ppm, or less	±20	±30			ppm	
Control Voltage Range	Vc		0V		Vcc		V	
Setability	Vcs	Vc to set the F at Fo; T, Vcc, load – nominal, as shipped	0.4 Vcc	0.5 Vcc	0.6 Vcc		V	
Absolute Pull Range	APR	Over all conditions, see part # creation	10, 20, 32, 50, 100				ppm	
Input impedance	Zin	@ Fmod < 100 KHz	50				KOhm	
Modulation Bandwidth		At Vc = Vcc/2, -3dB	20				KHz	

Environmental and Mechanical Characteristics

Operating temp. range	see Creating a part number
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. A
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Hermetic Seal	Leak rate less than 5x10 ⁻⁸ atm.cc/s of helium , crystal only.
Soldering conditions	See MAX reflow profile below