

VFTX130

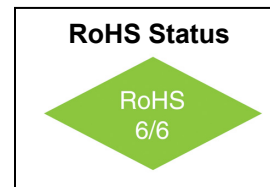
TCXO Low Noise

25.4x22mm SMD, CMOS



Features

- 30MHz to 180MHz frequency range
- Ultra low jitter and phase noise: -120 dBc/Hz @ 1kHz
- Excellent frequency stability < 1ppm
- Low power: <135mW typical



Applications

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

Description

The VFTX130 is a low noise TCXO capable of providing a CMOS output frequency up to 180MHz. The temperature stability is less than 1ppm over a temperature range of -40 °C to + 85 °C. Operating with a +3.3 volt power supply the device typically consumes 135 mW. The device contains an internal voltage regulator for improved stability and noise performance. The VFTX130 is available in a 25.4mm x 22 mm surface mount package.

Replaces Valpey Fisher Part Number: VFT7H

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		30		180	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature B: 0°C to +70°C G: -40°C to +85°C		0.5 0.8	1.0 1.0	ppm	
		Vs. Supply Voltage Vs. Aging / Year Vs. Aging / 10 Years		± 0.1 ± 1 ± 3		ppm/V ppm ppm	First Year 10 Years
Operating Temperature Range	T		0 -40		+70 +85	°C	Order Code B Order Code G
Output		CMOS					
Supply Voltage	V_{CC}		3.15	3.3	3.45	V	
Voltage Control	V_C		0		3.3	V	
Input Impedance			10			k Ω	
APR			± 5			ppm	
Deviation slope		Monotonic positive					
Linearity			-10		+10	%	
Modulation BW			10			Hz	3dB BW
Input Current	I_{CC}	@100MHz, 3.3V			40	mA	
Load		15pF / 10kOhms					
Duty Cycle		@ 50%	45	50	55	%	



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Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note	
Rise / Fall Time	T_R/T_F	20% to 80%		2.0		ns		
Logic "1" Level	V_{OH}	$I_{OH} = -100\mu A$	$V_{CC}-0.1$	V_{CC}		V		
Logic "0" Level	V_{OL}	$I_{OL} = 100\mu A$		0	0.1	V		
Start up time				2	10	ms		
Phase Jitter		12kHz to 20MHz		0.18	0.5	ps		
SSB Phase Noise		100Hz 1kHz 10kHz 100kHz		-90 -120 -145 -150		dBc/Hz	@ 155.52MHz	
Setability		Ref. to f_0			0.1	ppm		
Setability Voltage			1.3		1.7	V		
Enable / Disable Function		Input HIGH (>2.5V): DISABLED Input LOW (<0.5V) or floating: ACTIVE						LVC MOS
Enable / Disable Time	T_E/T_D				100	ns		

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	V_{CC}		-0.5		5.5	V	
Storage Temperature	T_s		-55		+105	°C	
Control Voltage	V_C		-0.5		6	V	

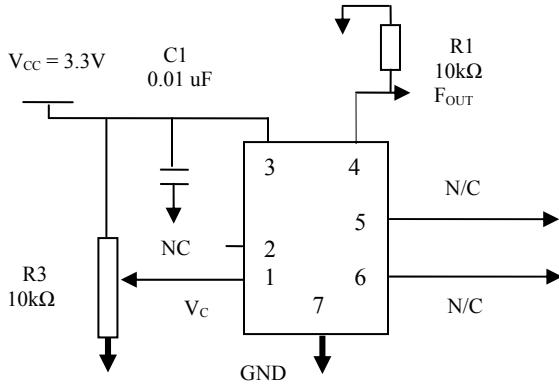
Environmental and Mechanical Conditions

Parameter	Condition
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)
Markings	Laser engraved or epoxy ink

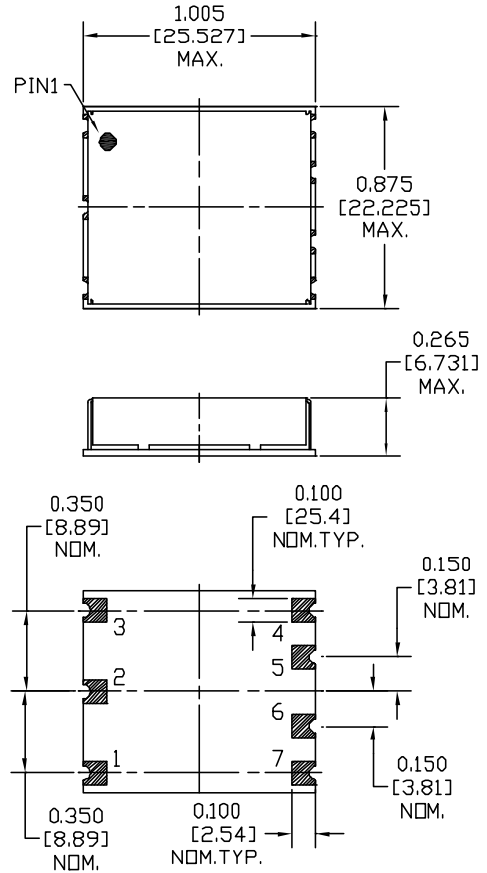
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Connection Diagram



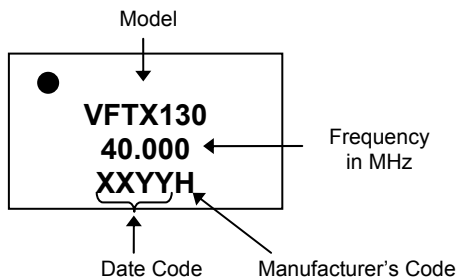
Mechanical Outline



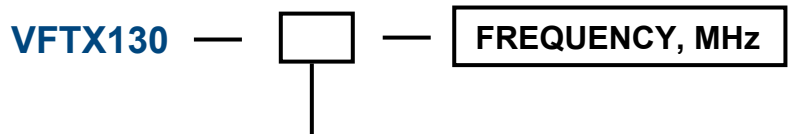
Pin Assignment

Pin #	Connection
1	V _c
2	N/C
3	V _{CC}
4	F _{OUT}
5	N/C
6	N/C
7	GND

Marking Specification



How to Order



Temperature Range

Code	Specification
B	0°C to 70°C
G	-40°C to 85°C

