

VFTX130

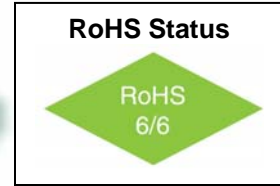
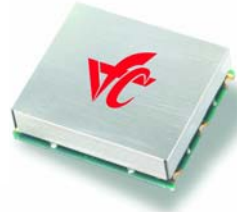
TCXO Low Noise

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	Vcc		3.15	3.30	3.45	V	
Voltage Control	Vc		0		3.3	V	
Input Impedance			10K			Ω	
APR			± 5			ppm	
Deviation slope		Monotonic positive					
Linearity			-10		+10	ppm/V	
Modulation BW			10			Hz	3dB BW

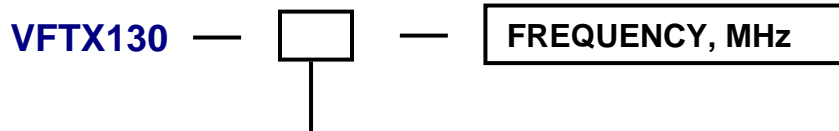
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Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Input Current	I _{cc}	@100MHz, 3.3V			40	mA	
Load	15pF / 10KOhm						
Duty Cycle		@ 50%	45	50	55	%	
Rise / Fall Time	T _r /T _f	20% to 80%		2.0		ns	
Logic "1" Level	V _{oh}	I _{oh} = -100uA	V _{cc} -0.1	V _{cc}		V	
Logic "0" Level	V _{ol}	I _{ol} = 100uA		0	0.1	V	
Start up time				2	10	ms	
Phase Jitter		12KHz to 20MHz		0.180	.5	ps	
SSB Phase Noise		100Hz 1KHz 10KHz 100KHz		-90 -120 -145 -150		dBc/Hz	@ 155.52 MHz
Setability					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	

How to Order



Temperature Range

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

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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

Parameter	Specification
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)

Connection Diagram

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

Mechanical Outline