VFTX301

TCXO with Voltage Control Option

5x3.2mm CMOS, Clipped Sine Wave

Valpey Fisher Corporation
Uncompromised Precision

Features

- Frequency range of 10MHz to 52MHz
- Enhanced long-term aging
- Supply voltage: 1.8V, 2.5V, 2.8V, 3.0V, 3.3V or 5.0V

RoHS Status

RoHS 6/6

Applications

- Portable equipment
- Telecommunications
- Data acquisition

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		10		52	MHz	See Note 1
Frequency Stability	ΔF/F	Vs. Operating Temperature ref to +25°C			±0.5 ±1.0 ±2.0	ppm	Select max. stability. See "How to Order"
		Vs. Supply Voltage (±5%) Vs. Load (±10%)			± 0.2 ± 0.2	ppm	
		Vs. Aging / Year Vs. Aging / 10 Years			± 0.5 ± 3.0		
Operating Temperature Range	T		-20° -30° -40°		+70° +85° +85°	°C	See "How to Order"
Supply Voltage	Vcc		4.75 3.135 2.85 2.66 2.375 1.71	5.0 3.3 3.0 2.8 2.5 1.8	5.25 3.465 3.15 2.94 2.625 1.89	V	*CMOS: only 2.8V or 3.3V available.* See "How to Order"
Output Level			0.8				Clipped Sine Wave
		Output High (Logic "1") Output Low (Logic "0")	90%			V_{DD}	CMOS
					10%		
Load		10KΩ//10pF					Clipped Sine Wave
		15pF					CMOS

*Note 1: Standard frequencies: 13 MHz, 14.4 MHz, 16.367667 MHz, 16.369 MHz, 16.8 MHz, 19.2 MHz, 19.44 MHz, 20 MHz, 24.5535 MHz, 26, 38.88 MHz, and 40 MHz. Check factory for other frequencies.

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Current		Clipped Sine Wave			2.5	mA	
		CMOS 3.3V			6		
Voltage Control	Vc	VCTCXO Version	0.5		2.5	V	
Input Impedance		VCTCXO Version	100K			Ω	
Pullability		VCTCXO Version	±5			ppm	See "How to Order"
Duty Cycle			45		55	%	CMOS
Initial Tolerance					±2.0	ppm	@ +25°C,1hour after reflow
SSB Phase Noise		@100 Hz @ 1 KHz @10 KHz		-115 -135 -148		dBc/Hz	Fo=13MHz
Start up					2	ms	

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	Vcc		-0.5		6.0	V	
Storage Temperature	Ts		-55°		+125°	°C	

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

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How to Order

VFTX301 — [ ][ ][ ][ ][ ] — **FREQUENCY, MHz**

Stability vs. Temp

Code	Specification
L	±0.5ppm
K	±1.0ppm
H	±2.0ppm

Temperature Range

Code	Specification
D	-20°C to 70°C
F	-30°C to +85°C
G	-40°C to 85°C

Vcc

Code	Specification
H	1.8V
G	2.5V
L	2.8V
F	3.0V
E	3.3V
D	5.0V

Pullability

Code	Specification	Type
T	N/A	TCXO
A	±5ppm	VCTCXO

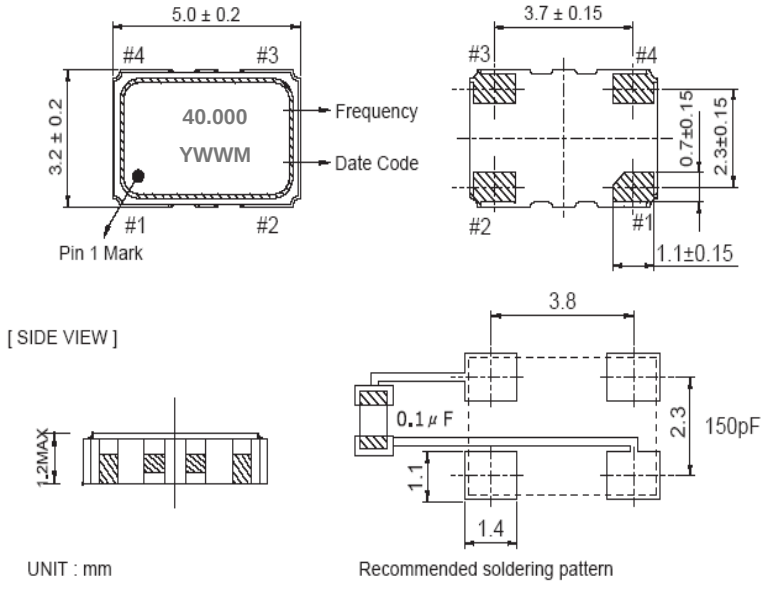
Output

Code	Specification
C	CMOS
N	Clipped Sine

***Freq. Stability Vs Temp Availability**

Temp (°C)	L: 0.5ppm	K: 1.0ppm	H: 2.0ppm
-20°C to +70°C	♦	♦	♦
-30°C to +85°C	♦	♦	♦
-40°C to +85°C	x	x	o

♦: Available
o: Availability dependent on frequency - contact factory
x: Not available



PAD	Function
1	Vc (VCTCXO) or N/C (TCXO)
2	GND
3	Output
4	Vcc

NOTE: External 150 pF series dc blocking capacitor is required at output (pad 3)