

VFTX301

TCXO with Voltage Control Option

5x3.2mm CMOS, Clipped Sine Wave

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	$\Delta F/F$	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	ppm	
Operating Temperature Range	T		-20° -30° -40°		+70° +85° +85°	°C	See "How to Order"
Supply Voltage	V _{CC}		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%		10%	V _{DD}	CMOS
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.

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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, 1 hour 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 5×10^{-8} atm.cc/s of helium



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How to Order

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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

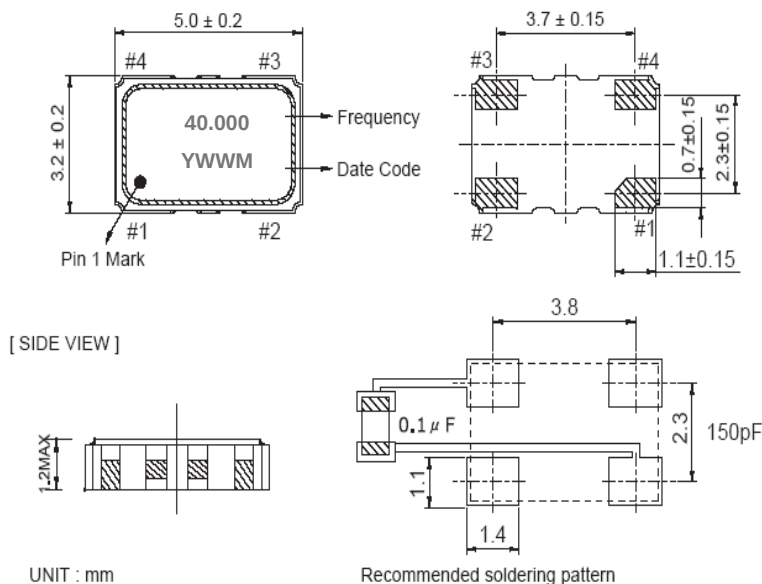
*Freq. Stability Vs Temp Availability

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)