

# VFTX110

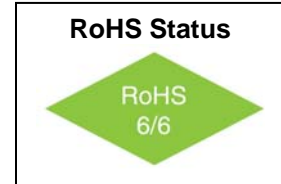
## TCXO Low Noise 1.0 GHz

### Europack, Sinewave



#### Features

- 50MHz to 1.0 GHz Frequency Range
- >+13dBm Output Power
- Ultra Low Jitter and Phase Noise: -125 dBc/Hz @ 1KHz
- Excellent frequency stability < 1ppm
- Low Power Consumption ~ 280mW typical



#### Applications

- Wireless reference source
- RADAR
- Test Equipment

#### Description

The VFTX110 is an ultra low noise high output power TCXO capable of providing an output frequency up to 1 GHz. The temperature stability is less than 1ppm over a temperature range of -40°C to + 85°C. The device contains an internal voltage regulator for improved stability and noise performance. The output is configured as a Sinewave signal which is optimal for multiplication to microwave frequencies.

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		50		1,000	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. Load ( $\pm 5\%$ ) Vs. Aging / Year Vs. Aging / 10 Years 1s gate time		$\pm 0.1$ $\pm 0.1$ $\pm 1$ $\pm 3$ $\pm 0.001$		ppm/V ppm ppm ppm ppm	First Year 10 Years Short term
Operating Temperature Range	T		0° -40°		+70° +85°	°C	Order Code B Order Code G
Supply Voltage	Vcc		4.75	5.00	5.25	V	
Supply Current	Icc	50 Ohm Load		62	70	mA	
Power Consumption	P	Steady state, 25°C		300	368	mW	
Voltage Control	Vc		0		3.3	V	
Input Impedance			50K			$\Omega$	
Pull Range (APR)			$\pm 2$		$\pm 8$	ppm	
Setability Voltage	Vc0	@25°C, Fnom.	1.3	1.5	1.7	V	Settable to $\pm 0.3$ ppm



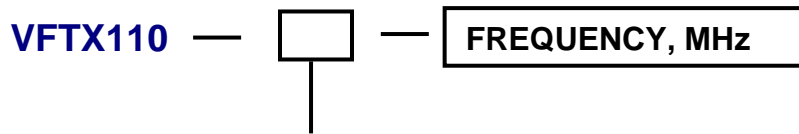
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**Electrical Specifications**

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Output power	P		10		15	dBm	
Load	50 Ohm						
Harmonics					-35	dBc	
Sub-Harmonics					-35	dBc	
Warm up time		@25°C @-40°C			30 90	s	
Phase Jitter		12KHz to 20MHz		0.25	0.5	ps	
SSB Phase Noise		10Hz 100Hz 1KHz 10KHz 100KHz		-70 -105 -125 -145 -150		dBc/Hz	@ 305.25MHz

**How to Order**



**Temperature Range**

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



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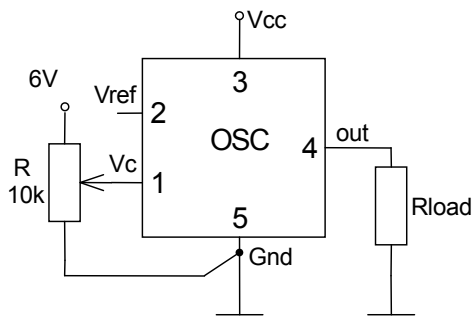
#### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	Vcc		-0.5		5.5	V	
Storage Temperature	Ts		-55		+105	°C	
Control Voltage	Vc		-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	230°C for 90s max
Hermetic Seal	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium (crystal only)

#### Connection Diagram



Pin #	Connections
Pin 1	Vc
Pin 2	Vref
Pin 3	Vcc
Pin 4	Output
Pin 5	GND

#### Mechanical Outline

