

VFOV110

OCXO Ultra Low Noise

25.4x22mm SMD, CMOS / SINE

Features

- 50MHz to 135MHz Frequency Range
- Ultra Low Phase Noise: -170 dBc/Hz @ 100KHz
- Sine Wave or CMOS/TTL output



RoHS Status

RoHS
6/6

Applications

- Point to Point Radio
- Satellite Base Station
- Synthesizer Reference
- Microwave Communications
- Test & Measurement
- Radar Reference

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		50		135	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature A: 0°C to +50°C B: 0°C to +70°C D: -20°C to +70°C G: -40°C to +85°C			± 0.2 ± 0.3 ± 0.5 ± 1.0	ppm	See How to Order Chart
		Vs. Aging / Year Vs. Aging / 10 Years		<1 <5		ppm ppm	After 30 days
Operating Temperature Range	T		0° 0° -20° -40°		+50° +70° +70° +85°	°C	Order Code A Order Code B Order Code D Order Code G
SSB Phase Noise		10Hz 100Hz 1KHz 10KHz 100KHz		-90 -120 -140 -168 -174	-85 -115 -135 -165 -170	dBc/Hz	@ 100MHz
Supply Voltage	Vcc		11.4 4.75	12.0 5.0	12.6 5.25	V	Order Code B Order Code D

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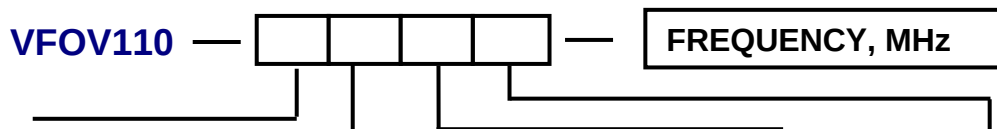
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Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Output Waveform/Load		Sine CMOS/TTL	+7 dBm min / 50 Ohm 4V / 10KOhm / 15pF				Order Code S Order Code C
Duty Cycle		CMOS 50% Waveform	45		55	%	
Rise / Fall Time	Tr/Tf	CMOS 15pF Load		2.0		ns	
Logic "1" Level	Voh	CMOS 15pF Load	3.6			V	
Logic "0" Level	Vol	CMOS 15pF Load			0.4	V	
Warm up time	t	To 0.1ppm accuracy		2	3	min	Ref to 1 hr frequency
Harmonics		Sine			-30		
Power Consumption	P	Steady State @ 25°C Steady State @ -40°C Start-Up		1.2 2.2 3.2	1.5 2.5 3.5	W	
Control Voltage	Vc		0		4.0	V	
Deviation Range				± 5	± 8	ppm	
Deviation slope		Monotonic, Positive					
Setability	Vco	25°C	1.5	2.0	2.5	V	
Reference Voltage	Vref		3.85	4.0	4.15	V	

How to Order



Temperature Stability

Code	Specification
K	1.0 ppm
L	0.5 ppm
M	0.3 ppm
P	0.2 ppm

Temperature Range

Code	Specification
A	0°C to 50°C
B	0°C to 70°C
D	-20°C to 70°C
G	-40°C to 85°C

Supply Voltage

Code	Specification
B	12V ± 5%
D	5V ± 5%

Output

Code	Specification
C	CMOS
S	Sinewave

Available Frequency Stabilities over Operating Temperature Ranges

Code	Temperature Range	1.0ppm	0.5ppm	0.3ppm	0.2ppm
A	0°C to 50°C	*	*	*	*
B	0°C to 70°C	*	*	*	
D	-20°C to 70°C	*	*		
G	-40°C to 85°C	*			

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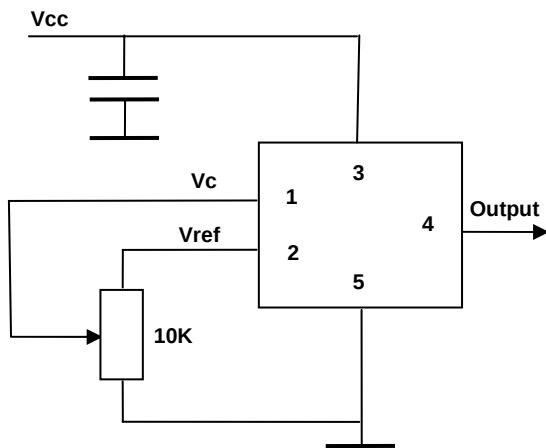
Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	V _{cc}	5 V Models 12V Models	-0.5 -0.5		+7.0 +15.0	V	
Storage Temperature	T _s		-55		+125	°C	
Control Voltage	V _c		-1		9	V	

Environmental and Mechanical

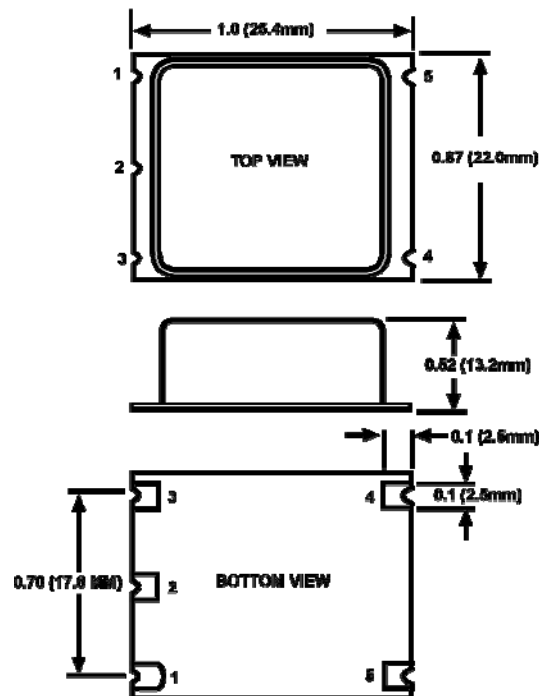
Parameter	Specification
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000Hz
Soldering Conditions	230°C for 30s max SMD Profile

Note: The VFOV110 is of a Non-Hermetic construction for use in No-Clean, No-Wash processes. Should you require implementing a wash, please consult the factory.



Pin Connections

Pin #	Connection
1	V _c
2	V _{ref}
3	V _{cc}
4	Output
5	GND



Outline Drawing