Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077
TEL: 1-281-870-8822 EMAIL: Sales@DynamicEng.com

OCXO3312C
Low Power and Phase Noise Miniature OCXO

Features and Benefits

Miniature DIP8 sizes
Very low power consumption (to 0.15W at +25°C)
High frequency stability (to ±5ppb over -40°C to +85°C)
Very fast warm-up (to 15s)
Low phase-noise level (-173dBc/Hz, floor)
Low aging (to 0.2ppb/day, 30ppb/year)
Fundamental operation at up to 150MHz

Typical Applications

Portable Wireless Communications
Mobile Test equipment
Beacons & Rescue systems
Battery Powered Applications

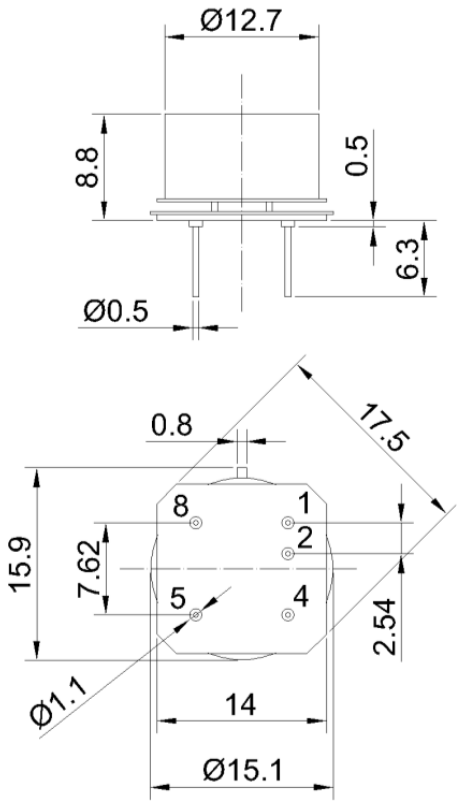
Description

The OCXO3312C series ovenized oscillator employs a directly heated crystal process which delivers very fast warm-up, excellent phase noise and frequency long term stability in a very small industry-standard package. The OCXO3312C is an excellent solution for various portable and/or battery fed applications with elevated requirements to frequency stability and phase-noise of the OCXO.

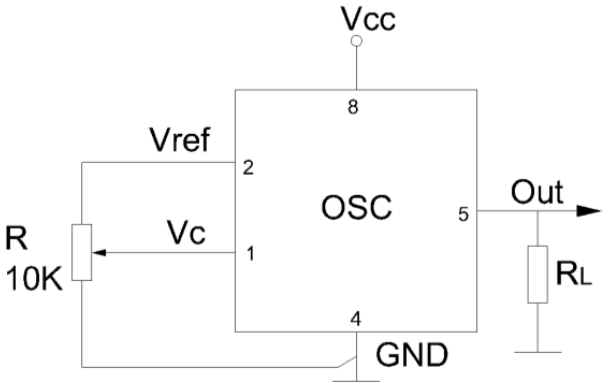
Mechanical Drawing & Pin Connections

Drawing No: MD140038-2

Physical dimensions



Schematic connections



Pin	Signal
1	Electrical tuning
2	Reference voltage
4	GND
5	RF Out
8	+V Supply

Unit : mm

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Specifications

Oscillator Specification		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Operational Frequency Range		F_{nom}		8		150	MHz	
HCMOS	Load			10			KOhm	
						15	pF	
	H-Level Voltage	V_H		3.8			V	
	L-Level Voltage	V_L				0.4	V	
	Duty Cycle			45		55	%	
	Rise/Fall Time					10	ns	For 10MHz optional frequency
Sine Wave Option	Level	L		+6	+8	+10	dBm	
	Load	RL			50		Ohm	
	Harmonics Level					-25	dBc	
Sub-harmonics Level					None			
Power Supply								
Voltage		V_{cc}		4.75	5.0	5.25	V	3.3V available
Power Consumption		$I_{warm-up}$	Warm-up state		0.7		W	
			Steady state, +25°C		0.15		W	
Warm-up Time:		t_{up}	$\Delta f/f_0$ = 1e-7 at 25°C	15	45		s	ref. to frequency after 10 min
Frequency Control*								
Control voltage range		V_c	V_{cc} = 5V	0		4.2	V	Tuning Slope Positive (standard option)
			V_{cc} = 3.3V	0		2.8	V	
Tuning range				±0.5	±1		ppm	
Reference voltage		V_{ref}	V_{cc} = 5V	4.1	4.2	4.3	V	
			V_{cc} = 3.3V	2.7	2.8	2.9	V	
Frequency Stability								
Vs. Operating Temperature Range			-40°C to +85°C, ref. 25°C			±5	ppb	For more information, please consult sales
Vs. Supply Voltage Change			Ref. V_{cc} typ.		±2		ppb	
Vs. Acceleration			Worst direction	±0.5		±1	ppb/G	
Aging Per Day			After 30 days of operation		±0.5		ppb	For more information, please consult sales
Aging Per Year					±0.05		ppm	
Phase noise			1 Hz	-100	-95		dBc/Hz	For 10MHz operational frequency
			10 Hz	-130	-125			
			100 Hz	-150	-145			
			1000 Hz	-160	-155			
			10 KHz	-170	-165			
			100 KHz	-173	-168			
Allan Variance			1s		20		e-12	
Environmental Conditions								
Operating temperature range	-40°C to +85°C							
Storage temperature range	-60°C to +90°C							
Humidity	Non-condensing 95%							
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms (500G, 1ms-special option)							
Vibration	Per MIL-STD-202, 10G swept sine 10 to 2000Hz							
Soldering Conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)							