



Dynamic Engineers Inc.

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Ultra Low Power Miniature Low Profile OCXO

Features and Benefits

Very Low Power Consumption: 0.15W at +25°C

Fast Warming-up: 60 s typical

Low Aging: +/-0.2 ppb/day, +/-20 ppb/year

Wide Frequency range: 8 – 120 MHz

Typical Applications

Portable Wireless Communications

Mobile Test equipment

Synthesizers

Battery Powered Application

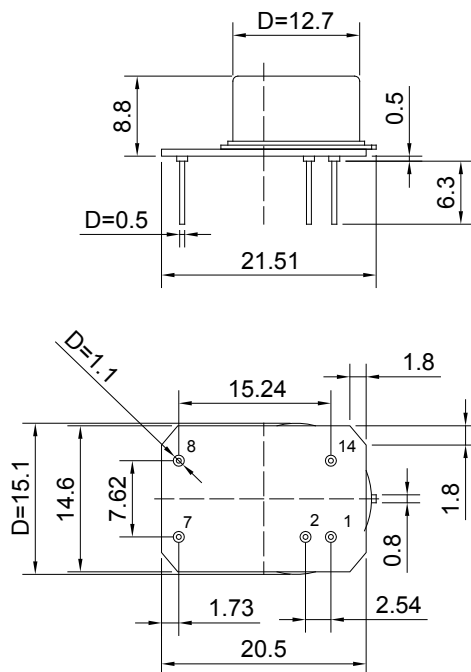
Description

The OCXO3307C-10MHz-D-V utilizes the internal heating resonator (IHR) technology incorporating the whole oven system together with the crystal plate inside the TO-8 vacuum holder. Such an OCXO concept results in radical reduction of its volume, power consumption and warm-up time. In spite of the miniature sizes and extremely low power consumption such oscillators exhibit excellent temperature stability, low phase-noise and aging rate being at the level of high-end OCXOs using conventional oven designs.

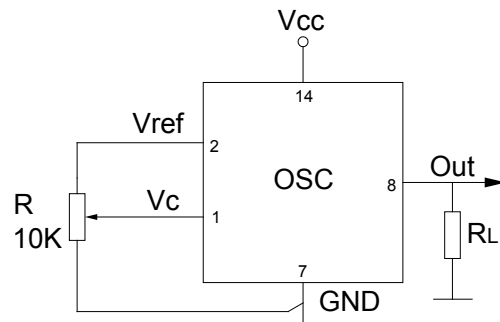
Mechanical Drawing & Pin Connections

Drawing No: MD140075-1

Physical dimensions



Schematic connections



Pin	Signal
1	Electrical tuning
2	Reference voltage
7	GND
8	RF Out
14	+V Supply

Unit: mm
1mm=0.039inch



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Specifications

Oscillator Specification		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Operational Frequency		F _{nom}			10.000000		MHz	
RF Output								
Waveform :					HCMOS			
Load			@10MHz		10		pF	
H-level voltage			V _{cc} =3.3V	2.4			V	
L-level voltage						0.4	V	
Duty cycle				45		55	%	
Rise/Fall time						10	ns	
Sub-harmonics level					none			
Frequency control								
Control voltage range		V _c		0		2.8	V	
Frequency Turning Range				+/-0.5	+/-1	-	ppm	+
Reference Voltage		V _{ref}			2.8		V	
Power Supply								
Voltage		V _{cc}			3.3		V	
Power consumption			Warm-up state		0.7		W	
			@ +25°C steady state		0.15			
Warm-up Time:		T _{up}	to Δf/f = 1e ⁻⁷ at +25°C		60		s	ref. to frequency after 15 min
Frequency Stability								
Vs. Temperature			Ref. 25°C			+/- 5	ppb	
Vs. Supply Voltage			Ref V _{cc} typ.		+/-2		ppb	
vs. direction			worst direction			+/-1	ppb/g	
Aging@10Mhz	per day		after 30days of operation			+/-0.2	ppb	
	first year					+/-20	ppb	
SSB Phase noise			1 Hz		-100		dBc/Hz	
			10 Hz		-135			
			100 Hz		-159			
			1 KHz		-166			
			10KHz		-170			
			100 KHz		-170			
Environmental Conditions								
Storage temperature range		-60°C to 90°C						
Operating temperature range		-40°C to 85°C						
Humidity		Non-condensing 95%						
Mechanical Shock		MIL-STD-202, 30G half sine pulse, 11 ms						
Vibration		MIL-STD-202, 5G swept sine, 10 to 2000 Hz						
Washing Conditions		Washing with water or alcohol based detergent allowed only with final enough drying stage						
Soldering Conditions		Hand solder only – not reflow compatible 260°C 10s(on pins)						