



Dynamic Engineers Inc.

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OCXO2020C-7%±MHz-A-V

Miniature VHF Oven OCXO

Features and Benefits

- Outstanding phase noise with Sine-wave output
- Nominal frequency is 77 MHz
- Hermetically sealed package
- Only ±2 ppb aging per day after 30 days of operation

Typical Applications

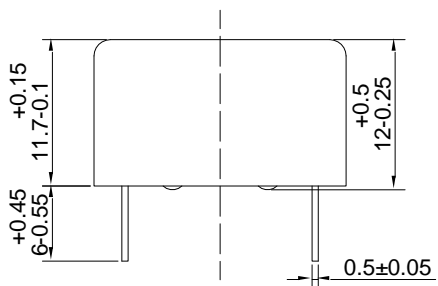
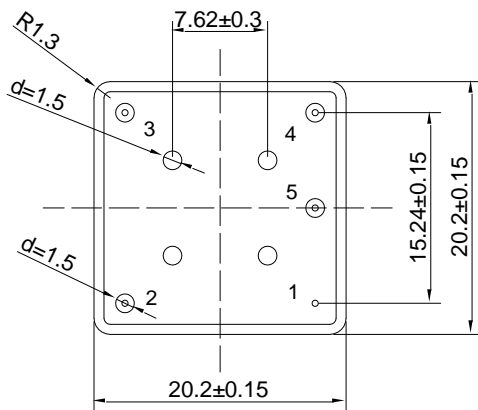
- Test Instruments
- Low Noise reference for Synthesizer stages
- Microwave Communication Systems

Description

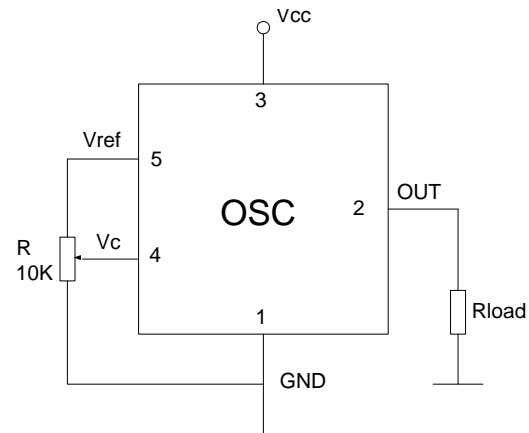
The OCXO2020C offers cutting edge low noise and low power oven technology in the smallest possible cubic volume with 50% less power dissipation than traditional design techniques.

Mechanical Drawing & Pin Connections

Drawing No: MD140069-2



unit:mm





Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	F_{nom}			10.000000		MHz	
Initial tolerance		at +25°C, $V_C=V_{C0}$	-0.2		+0.2	ppm	
RF Output							
Wave form				Sine-wave			
Level			+6	+8	+10	dBm	
Load			45	50	55	Ohm	
Harmonics level					-30	dBc	
Spurious					-100	dBc	
Frequency control							
Input Resistance	R_{in}			11		Kohm	
Voltage Range	V_C		0		4.2	V	
Factory set control voltage	V_{C0}	disconnected V_C pin	1.55	2.1	2.65	V	
Frequency Turning Range	$(f_L-f)/f$	$V_C = 0V$			-1.0	ppm	+
	$(f-f)/f$	$V_C=V_{C0}$		0			
	$(f_H-f)/f$	$V_C = V_{ref}$	1.0			ppm	+
Reference Voltage	V_{ref}		4.1	4.2	4.3	V	
Output Resistance of V_{ref}				91		Ohm	
Slope				Positive			
Power Supply							
Voltage	V_{cc}		4.75	5.0	5.25	V	
Warm-up current		$V_{cc}=5.0V$	550		700	mA	
Continuous current		at +25°C, $V_{cc}=5.0V$			240	mA	
Warm-up Time:	T_{up}	to $\Delta f/f = 1e^{-7}$ at +25°C			180	sec	
Frequency Stability							
Vs. Temperature		Ref. 25°C			+/-20.0	ppb	
Vs. Supply Voltage		Ref V_{cc} typ.			+/-1	ppb	
Vs. load		Ref. R_L typ			+/-1	ppb	
vs. G-sensitivity		worst direction			+/-1	ppb/g	
Aging	per day	after 30days of operation			+/-3	ppb	
	first year				+/-0.3	ppm	
SSB Phase noise		10 Hz		-87		dBc/Hz	
		100 Hz		-117			
		1K Hz		-145	-140		
		10 KHz		-160			
		100KHz		-165			
Allan variance		1s		4		e-11	
Environmental Conditions							
Power voltage		-0.5 to 6.0 V					
Control voltage		-1.0 to 6.0 V					
Operating temperature range		-45°C to +70°C					
Storage temperature range		-60°C to 90°C					
Humidity		Hermetically sealed					
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)					