



# Dynamic Engineers Inc.

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**OCXO2020C-78.6432MHz-A-V**

Miniature VHF Oven OCXO

## Features and Benefits

- Outstanding phase noise with Sine-wave output
- Nominal frequency is 78.6432MHz
- Hermetically sealed package
- Only  $\pm 2$  ppb aging per day after 30 days of operation

## Typical Applications

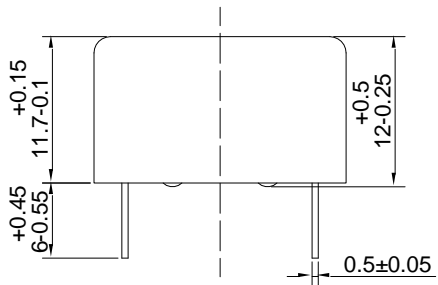
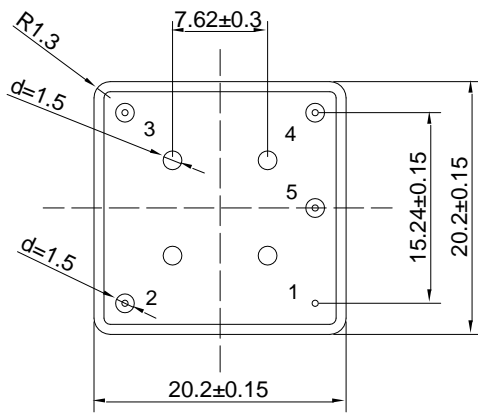
- Test Instruments
- Low Noise reference for Synthesizer stages
- Microwave Communication Systems

## Description

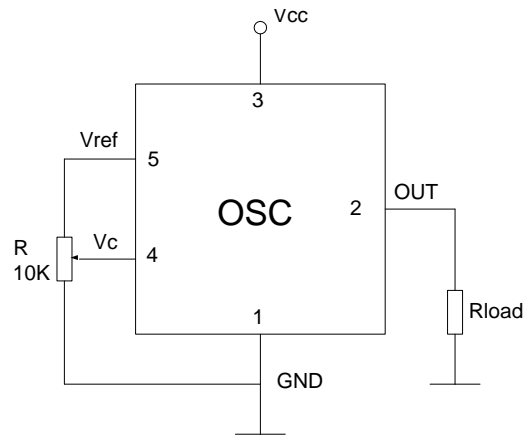
The OCXO2020C offers cutting edge low noise and low power oven technology in the smallest possible cubic volume with 50% less power dissipation than traditional design techniques.

## Mechanical Drawing & Pin Connections

Drawing No: MD140069-2



unit:mm





**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	$F_{nom}$			78.6432		MHz	
Initial tolerance		at +25°C, $V_C=V_{C0}$	-0.2		+0.2	ppm	
<b>RF Output</b>							
Wave form				Sine-wave			
Level			+6	+8	+10	dBm	
Load			45	50	55	Ohm	
Harmonics level					-30	dBc	
Spurious					-100	dBc	
<b>Frequency control</b>							
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			
<b>Power Supply</b>							
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	
<b>Frequency Stability</b>							
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			
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<b>Environmental Conditions</b>							
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)					