



# Dynamic Engineers Inc.

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## Features and Benefits

- Sine-wave RF output
- Custom low Noise 92.16MHz output signal
- Low aging at +/-2 ppb/day and +/-0.2 ppm/year
- Operating temperature -30°C to +70°C

## Typical Applications

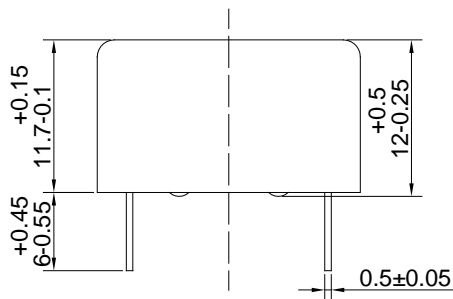
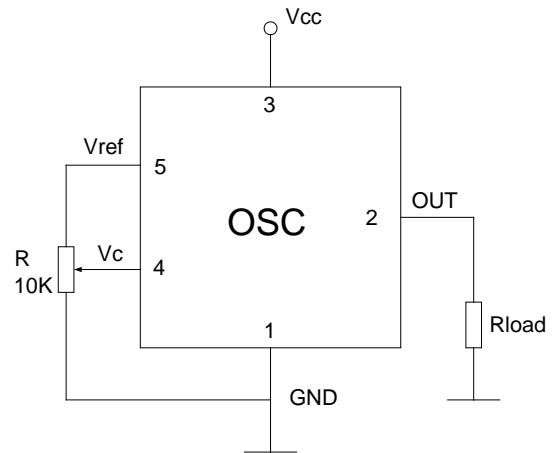
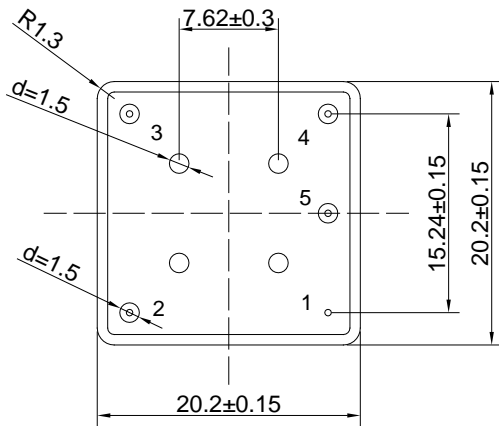
- Cellular Base Stations
- Instrumentation
- Microwave Application
- Stratum 3E clock systems.

## Description

Miniature, high performance OCXO design platform that have 92.16MHz output frequency without using circuit multiplication from the crystal frequency utilized.

## Mechanical Drawing & Pin Connections

Drawing No: MD140069-2



### Pin Connections

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

Unit : mm  
 1mm=0.0394inch



## Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	$f_0$		92.160000			MHz	
Initial Tolerance		At +25°C, $V_c=V_{c0}$	-0.2		+0.2	ppm	
<b>RF Output</b>							
Waveform :			Sine-wave				
Level	L		+5			dBm	
Load	$R_L$		45	50	55	Ohm	
Harmonics Level					-30	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	
Slope			positive				
Frequency Turning Range	$(f_L-f)/f$	$V_c=0V$			-1.0	ppm	
	$(f-f)/f$	$V_c=V_{c0}$		0		ppm	
	$(f_H-f)/f$	$V_c=V_{ref}$	1.0			ppm	
Reference Voltage	$V_{ref}$		4.1	4.2	4.3	V	
Out. Resistance of $V_{ref}$				91		Ohm	
<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	s	
<b>Frequency Stability</b>							
Vs. Temperature		Ref.+25°C			+/-20	ppb	
Vs. Supply Voltage		Ref. $V_{cc}$ typ.			+/-2	ppb	
vs. Load		Ref. $R_L$ typ.			+/-2	ppb	
Aging	per day	after 30days of operation			+/-2	ppb	
	per year				+/-0.2	ppm	
SSB Phase noise		10 Hz		-95		dBc/Hz	
		100 Hz		-125			
		1 KHz		-155			
		10 KHz		-165			
		100 KHz		-168			
<b>Environmental Conditions</b>							
Power Voltage	-0.5 to 6.0 V						
Control Voltage	-1.0 to 6.0 V						
Storage Temperature Range	-60°C to +90°C						
Operating Temperature Range	-30°C to +70°C						
Humidity	Hermetically sealed						
Mechanical Shock	MIL-STD-202, 30G half sine pulse, 11 ms						
Vibration	MIL-STD-202, 5G to 500Hz						
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)						