

Features and Benefits

Better than ± 30 ppb available over -30°C to $+70^{\circ}\text{C}$
 Aging as good as ± 2.0 ppb per day
 Outstanding phase noise with HCMOS output
 Very low power: 200 mW max. @ $+25^{\circ}\text{C}$
 Hermetically sealed package

Typical Applications

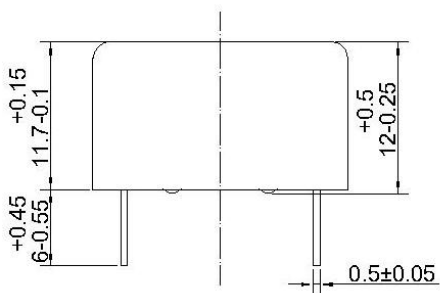
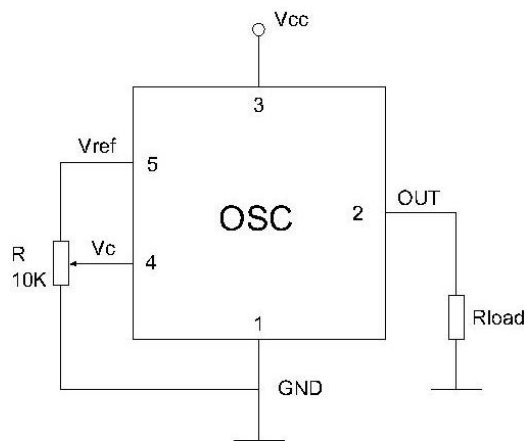
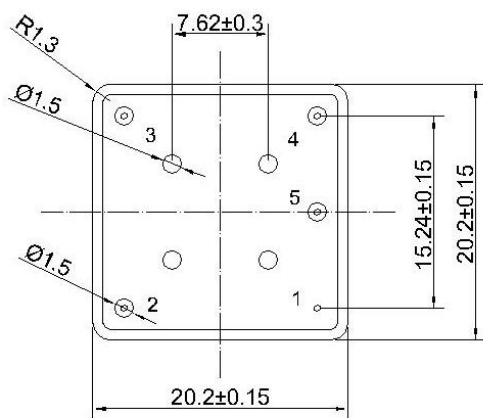
Test Instruments
 Low Noise reference for Synthesizer stages
 Microwave Communication Systems

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



Pin Connections

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

Unit : mm

*12.9mm, 14.1mm height and 0.8mm pins are available

Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	F _{nom}			81.920000		MHz	
RF Output							
Wave form				HCMOS			
High Voltage			+3.8			V	
Low Voltage					0.4	V	
Output Load					15	pF	
Rise / Fall Time					10	ns	
Frequency control							
Input Resistance	R _{in}			11		Kohm	
Voltage Range	V _c		0		4.2	V	Positive
Frequency Turning Range	(f _L -f)/f	V _C = 0V		-1.50		ppm	+
	(f _H -f)/f	V _C = V _{ref}		+1.50		ppm	+
Reference Voltage	V _{ref}		4.1	4.2	4.3	V	
Output Resistance of V _{ref}				91		Ohm	
Power Supply							
Voltage	V _{cc}		4.75	5.0	5.25	V	
Power Consumption		Warm-up			1.2	W	V _{cc} =5V
		Steady-state			0.2	W	V _{cc} =5V@25°C
Warm-up Time:	T _{up}	to Δf/f = 1e ⁻⁷ at +25°C ref. to 30 min.			90	sec	
Frequency Stability							
Tolerance At 25°C		@25°C, V _c = V _{Co}	-0.1		+0.1	ppm	
Vs. Temperature		Ref. 25°C			+/-30.0	ppb	
Vs. Supply Voltage		Ref Vcc typ.			+/-0.2	ppb	
Aging	per day	after 30days of operation		+/-2.0		ppb	
	first year			+/-200		ppb	
Phase Noise		10 Hz		-95		dBc/Hz	
		100 Hz		-125			
		1K Hz		-153			
		10 KHz		-165			
		100KHz		-168			
Environmental Conditions							
Power voltage	-0.5 to 6.0 V						
Control voltage	-1.0 to 6.0 V						
Operating temperature range	-30°C to +70°C						
Storage temperature range	-60°C to 90°C						
Humidity	Hermetically sealed						
Mechanical Shock	Per MIL-STD-202, 30G, 11ms						
Vibration	Per MIL-STD-202, 10G 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)						