OCXO2020C
High stability Low phase-noise OCXO

Features and Benefits

High temperature stability: to +/-1ppb in (-40 to +85) °C
Very low phase noise: (to -175dBc/Hz, floor)
Low aging: to 0.2ppb/day and 0.02ppm/year
Fundamental operation at 5 through 150MHz
Small sizes packaging

Description

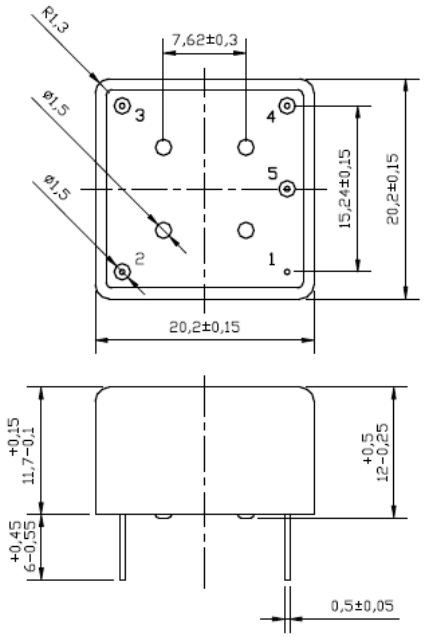
The OCXO2020C series oven-controlled crystal oscillator are intended for wide applications where high temperature stability, low aging, low phase-noise along and compact sizes are major requirements

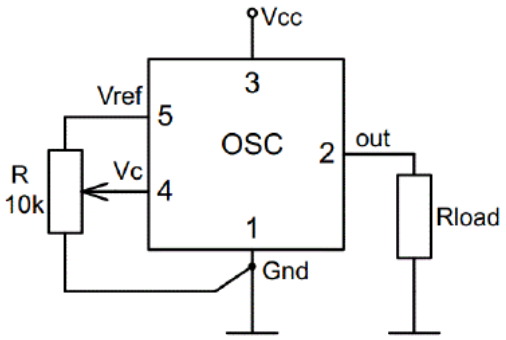
Typical Applications

Cellular Base Stations
Instrumentation
Stratum 3E clock systems
Microwave Applications
Radar reference

Mechanical Drawing & Pin Connections

Drawing No: MD140082-1





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

* - 10.3 mm, 12.9 mm heights and 0.8 mm pins diameter are available on customer requirement

Specifications

OCXO Specification		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Frequency Range		F_0		5		150	MHz	Fundamental operation
RF Output								
HCOMS (TTL) Option	Load			10			kOhm	
						15	pF	
	H-level Voltage	V_H	@ V_{cc} = 5V or 12V	3.8			V	
			@ V_{cc} = 3.3V	2.4				
	L-level Voltage	V_L				0.4	V	
	Duty Cycle			45		55	%	
	Rise/Fall Time					10	ns	For 10MHz operational frequency
Sine Wave Option	Level	L		+6	+8	+10	dBm	
	Load	R_L			50		Ohm	
	Harmonics Level					-30	dBc	
Spurious Level						-100	dBc	
Power Supply								
Voltage		V_{cc}		4.75	5.0	5.25	V	3.3V, 12V optional
Power Consumption			Warm-up state		3.2	3.5	W	
			Steady state, +25°C		1	1.2	W	
Warm-up Time		t_{up}	To $\triangle f/f_0$ = 1e-7 at 25°C			180	s	ref. to frequency after 30 min
Frequency Control								
Control Voltage Range		V_c	@ V_{cc} = 5V or 12V	0		4.2	V	Positive tuning slope (standard option)
			@ V_{cc} = 3.3V	0		2.8	V	
Tuning Range				+/-0.5	+/-1		ppm	
Reference Voltage		V_{ref}	@ V_{cc} = 5V or 12V	4.1	4.2	4.3	V	
			@ V_{cc} = 3.3V	2.7	2.8	2.9	V	
Frequency Stability								
vs. Temperature			-40°C to +85°C, ref. 25°C		+/-10		ppb	For more information, please consult sale
vs. Supply Voltage			Ref. V_{cc} typ.		+/-1		ppb	
vs. Acceleration			Worst direction	+/-0.5		+/-1	ppb/G	
Aging	Per Day		After 30 days of operation	0.2	0.5		ppb	For 10MHz, For more information, please consult sale
	First Year			20	50		ppb	
	For 20 Years			0.3	0.5		ppm	
Phase Noise								
Phase Noise			1Hz	-110	-100		dBc/Hz	For 10MHz operational frequency
			10Hz	-135	-125			
			100Hz	-155	-145			
			1kHz	-163	-155			
			10kHz	-173	-168			
			100kHz	-175	-173			
Allan Variance			1s	5	10		e-12	
Environmental								
Operating Temperature Range		For more information, please consult sale						
Storage Temperature Range		-60°C to +90°C						
Humidity		Hermetically sealed						
Mechanical Shock		Per MIL-STD-202, 30G half sine pulse, 11ms						
Vibration		Per MIL-STD-202, 10G swept sine 10 to 500Hz (pins 0.5mm), 10G swept sine 0-2000Hz (pins 0.8mm)						
Soldering Conditions		Hand solder only – not reflow compatible, 260°C 10s						