Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077
TEL: 1-281-870-8822 EMAIL: Sales@DynamicEng.com

ETOCXO2020C-10MHz-A-V

High-Temperature and High Stability OCXO

Features and Benefits

Temperature stability: 10 ppb for (-40 to +130)°C
Low Phase noise: -170 dBc/Hz @ 100kHz
Low aging: ±0.3 ppb/day, 30 ppb/year
Allan Variance: ±5 x 10^{-12}/s
Frequency range from 5 to 30 MHz

Typical Applications

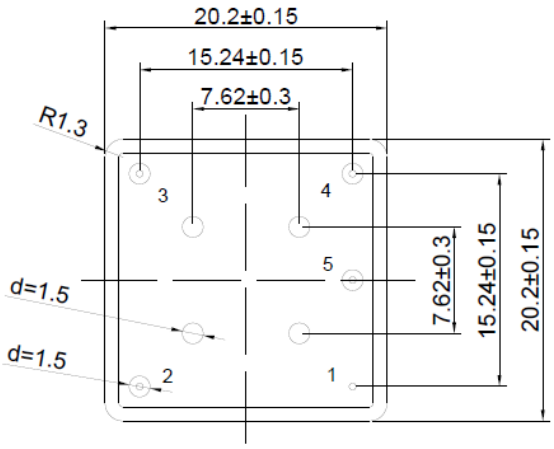
Cellular Base Stations
Instrumentation
Stratum 3 Clock Systems
Microwave Communication
Radar reference

Description

The ETOCXO family of extreme temperature ovenized oscillators is able to maintain low parts per billion stabilities even at ambient temperatures as high as +130°C. Proprietary high temperature materials / processing techniques allow the product to achieve highly stable output and superior long term reliability.

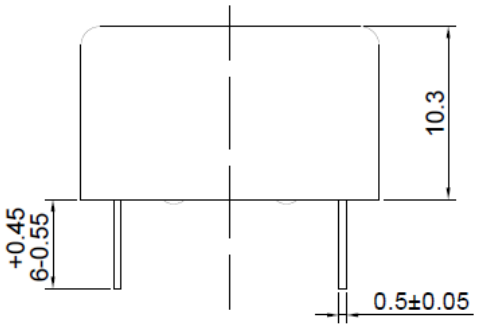
Mechanical Drawing & Pin Connections

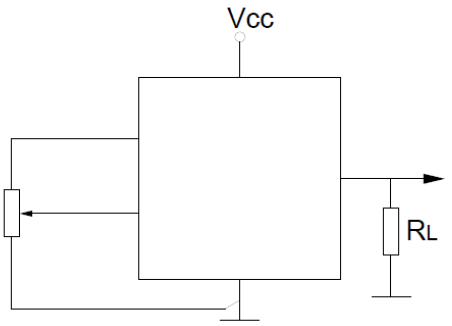
Drawing No: MD140078-2



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

Unit : mm





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Specifications

OCXO Specification		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Frequency Range		F_0			10		MHz	
RF Output								
Sine Wave Option	Level	L		+6	+8	+10	dBm	
	Load	R_L			50		Ohm	
	Harmonics Level					-25	dBc	
Spurious Level					None			
Power Supply								
Voltage		V_{cc}		4.75	5.0	5.25	V	
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		0		4.2	V	Positive tuning slope
Tuning Range				+/-0.35	+/-1		ppm	
Reference Voltage		V_{ref}		4.1	4.2	4.3	V	
Frequency Stability								
vs. Temperature			-40°C to +130°C, ref. 25°C			+/-10	ppb	
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	0.3	0.5		ppb	
	First Year			30	50		ppb	
	For 20 Years				0.5		ppm	
Phase Noise								
Phase Noise			1Hz	-110	-100		dBc/Hz	
			10Hz	-135	-125			
			100Hz	-155	-145			
			1kHz	-163	-155			
			10kHz	-170	-168			
			100kHz	-170	-170			
Allan Variance			1s	5			e-12	

Environmental	
Operating Temperature Range	-40°C to +130°C
Storage Temperature Range	-60°C to +130°C
Humidity	Hermetically sealed
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms (500G, 1ms - optionally)
Vibration	Per MIL-STD-202, 10G swept sine 10 to 500Hz
Soldering Conditions	Hand solder only-not reflow compatible. 260°C 10s