OCXO2021C_series

High stability low phase-noise OCXO

Features and Benefits

30-300MHz Frequency Range 3.3V,5V,12V Supply voltage HCMOS,TTL,Sinewave Output waveform Various Temperature Stability Available 20.2x20.2x12.6mm Size -135dBc/Hz @1KHz phase noise value

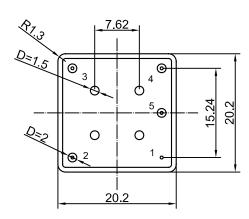
Typical Applications

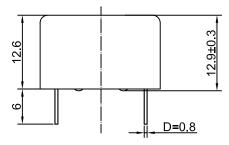
Cellular Base Stations Instrumentation Microwave Applications Stratum 3E clock systems Radar reference

Description

The OCXO2021C_series operate in wide frequency range from 30 to 300 MHz with usage of internal frequency multiplication by 3 or 5. Besides, the internal multiplication of frequency enables to the oscillators improvement, The module concept of the OCXOs design allowed realization of same performance in a variety of small packages on customer choice under various models.

Mechanical Drawing & Pin Connections

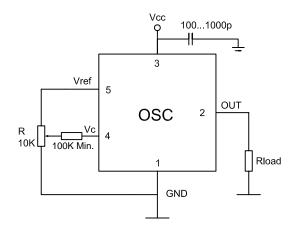




12mm, 10.3mm height available 0.5mm Pins available

Drawing No:

MD160093-1



Pin Connections

Pin	Description			
1	GND			
2	Output			
3	Vcc			
4	Control Voltage			
5	Vref			

Unit in mm 1mm = 0.0394 inches



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Specifications

Oscillator Specification	Sym	Condition	Min.	Value	May	Unit	Note
Frequency Range	F _{nom}		30	Тур.	Max. 300	MHz	Frequency multiplication on 3 and 5
RF Output	T	1		LONGO (TT	1) ('		
Signal Waveform				HCMOS(TT	/ !		400141-
Load	R _L	Vcc=5V,12V	3.7	10kohm//5p	T	V	100MHz
H-Level Voltage	V_{H}	Vcc=3.3V	2.4			V	
L- Level Voltage	V_L				0.4	V	
Duty Cycle			45		55	%	
Rise/Fall time					3	ns	100MHz
Signal Waveform				Sinewave	option		
Level		Vcc=5V,12V	+7			dBm	
		Vcc=3.3V	+4				
_oad Harmonics				50	20	ohm	
armonics Sub-Harmonics					-30 -40	dBc dBc	100MHz
Power Supply					-40	ubc	TUUIVINZ
	T	Vcc=5V,12V	4.0		4.3	V	
Reference Voltage	Vref	Vcc=3.3V	2.5		3.1	V	
		V CC=3.5 V	11.4	12	12.6	v	
Supply Voltage	V _{cc}		4.75	5.0	5.25	1 v F	
Supply Voltage	• 66		3.15	3.3	3.45	1	
Warm-up Time	T_{up}	at +25°C to Δf/f=1e- 7			180	sec	ref. to freq. after1 min. of operation
		Steady state, +25°C			1200	mW	100MHz,-40°C -
Power Consumption		Warm-up			3500	mW	+85°C
Frequency Adjustment Range	1					1	
Electronic Frequency Control (EFC)		Compliance with 10 years of aging		±0.5		ppm	
FFO		Vcc=5V,12V	0		4.3	V	
EFC voltage	Vc	Vcc=3.3V	0		3.1	V	
EFC Slope				positive			
Frequency Stability						,	
Versus Operating Temperature Range		ref. 25°C, air flow	±3.0			ppb	See ordering
Initial Tolerance	(6.60)/60	0.5 m/s max. +25°C, Vc=0.5*Vref	.0.04	.0.4			information
Initial Tolerance Versus supply voltage	(f-f0)/f0 V _S	ref Vcc typ	±0.01	±0.1 ±0.2		ppm	
versus supply voltage	VS	worst direction, 0 –		±0.2		ppb	
G – sensitivity		1kHz vibration BW (for 0 – 2kHz BW consult the factory)	±0.5	±1.0		ppb/G	
Retrace		24h work after 24h off			±10	ppb	100MHz
Aging Per Day		after 30 days of	±0.5			ppb	100MHz see
Aging 1 st Year		operation	±0.05			ppm	ordering information
Allan Variance		1s	5	20		e-12	100MHz
		10Hz	-110	-100		dBc/Hz	
SSB Phase noise (Typical phase noise is		100Hz	-130	-121		dBc/Hz	100MHz Frequency
							- Frequency
default option. For different phase noise		1kHz	-145	-135		dBc/Hz	
default option. For different phase noise consult the factory)		1kHz 10kHz 100kHz	-145 -155 -155	-135 -145 -150		dBc/Hz dBc/Hz dBc/Hz	multiplication or



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Environmental, Mechanical Conditions	
Airflow velocity	0.5 m/s maximum
Operating temperature range	See ordering information
Storage temperature range	-60°C to 85°C
Mechanical shock	Per MIL-STD-202, 30G half sine pulse, 11ms (500G, 1ms — optionally)
Soldering conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)
Humidity	Hermetically sealed
Power Voltage	-0.5V to Vcc+20%
Control Voltage	-0.5V to 6V
Vibration	Per MIL-STD-202, 10G swept sine 0 to 2000Hz
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage

Ordering Information

OCXO2021C	•	100MHz	•	Х	Х	Х	Х	Х	ı
Group				01	02	03	04	05	

For example, DOCXO2021C-100MHz-1-1-2-2-2 denotes the OCXO has the following specifications:

Temperature Range: 0°C to +50°C

Stability Over Temperature: ±2ppb

Aging per day / per year: 0.2ppb/0.02ppm

Supply Voltage:

5V Sinewave Output:

01	Temperature Range
Code	Specification
1	0°C to +50°C
2	-10°C to +60°C
3	0°C to +70°C
4	-20°C to +70°C
5	-30°C to +70°C
6	-40°C to +85°C
7	-55°C to +85°C
8	-60°C to +85°C

02		Frequency Stability					
Code	Spec	Temperature range code available for 100MHz 5V	Temperature range code available for 300MHz 5V				
1	±2ppb	1,2					
2	±3ppb	1,2,3,4,5,6	1,2				
3	±5ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6				
4	±10ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8				
5	±20ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8				
6	±30ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8				
7	±50ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8				

03	Aging per day/per year,ppb/ppm				
Code	Specif	ication			
1	0.1/0.015	For frequency range of 30-150 MHz			
2	0.2/0.02				
3	0.3/0.03				
4	0.5/0.05				
5	1/0.1				
6	1.5/0.15				
7	2/0.2	For frequency range of 150-300			
8	3/0.3	MHz			
9	5/0.5				

04	Supply Voltage
Code	Specification
1	3.3V±5%
2	5V±5%
3	12V±5%

05	Output
Code	Specification
1	HCMOS/TTL
2	Sinewave