

Dynamic Engineers Inc.

2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA TEL: 1-281-870-8822 EMAIL:Sales@DynamicEnq.com

C7LC''%5K

Ultra Low Power High Frequency High Stability Miniature OCXO

Features and Benefits

Very low power consumption - to 0.18W at +25°C Shock resistant, 500G 1ms
14 DIP compatible sizes and pins-out
Extended to 300 MHz frequency range (multiplication is used)
Up to 1x10-8 temperature stability in (-40--+85)°C at 100 MHz
Very low aging – to 50 ppb/year at 100 MHz
Low Allan variance, 1s 1x10-11
Fast warming up to 30 s

Typical Applications

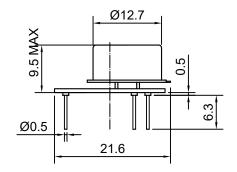
Portable and Low Power Synthesizer Reference Microwave Communications Instrumentation Radar Reference

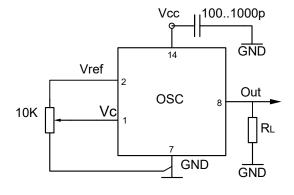
Description

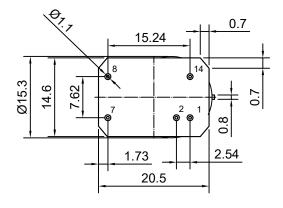
The OCXO3319AW operate in wide frequency range from 30 to 300 MHz with usage of internal frequency multiplication by 3 or 5. Besides, the internal multiplication of frequency enables to the oscillators improvement, the module concept of the OCXOs design allowed realization of same performance in a variety of small packages on customer choice under various models.

Mechanical Drawing & Pin Connections

Drawing No: "A8% \$\$+*!*
Schematic connections







Pin	Signal
1	Electrical tuning
2	Reference voltage
7	GND
8	RF Out
14	+V Supply

Unit in mm 1mm = 0.0394 inches



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Specification	Specifications			l	Value		1	
Find	Oscillator Specification	Sym	Condition	Min.	Value Tvp.	Max.	Unit	Note
HCMOS/TTL) option	Frequency Range	F _{nom}			. y p.		MHz	
Load	RF Output							
Heavel Voltage					HCMOS(TTL) option	1	4000411-
Vice			\/cc=5\/	2.7	10konm//5	of	\ \/	100MHz
Level Voltage	H-Level Voltage	V _H						V
Duty Cycle	L- Level Voltage	VL	V 00-0.0 V			0.4		·
Signal Waveform Sinewave option Cere Voc=5V 4.7 Sinewave option Cere C	Duty Cycle			45		55	%	
Vecus Vecu							ns	100MHz
Voc=3,3V +4 50	Signal Waveform		\/ [\/	. 7	Sinewa	ve option	dD.ee	
Sub-Hamonics	Level						abm	
	Load		V 00-0.0 V		50		ohm	
Reference Voltage	Harmonics					-25	dBc	
Vief Vice=6V 4.1 4.2 4.3 V Vice=6V Vice=3.3V 2.7 2.8 2.9 V Vice=6V Vice=3.3V 2.7 2.8 2.9 V Vice=6V Vice=6	Sub-Harmonics					-40	dBc	
Viel Vcc=3,3V 2,7 2,8 2,9 V	Power Supply	1	T				1	1
Vice	Reference Voltage	Vref						
Marm-up Time	<u> </u>		VCC=3.3V	2.7	2.8	2.9	V	
Marm-up Time	Supply Voltage	Vcc		4.75	5.0	5.25	V	
Variable	- app., - cg-	1 00		3.15			-	
Variable Variabl			at +25°C to Δf/f=1e-	30	60		SAC	ref. to freq. after1
Steady state, +25°C	Warm-up Time	Tup	-	30	00		300	min. of operation
Steady state, +25°C 180		Sp.			120			
Warm-up					180		mW	100MHz
Electronic Frequency Control (EFC) Compliance with 10 years of aging ±0.3 ±1 ppm	Power Consumption				.00	1200	_	
See ordering See	Frequency Adjustment Range							
See ordering See								
See ordering See	Electronic Frequency Control (EFC)			±0.3	±1		ppm	
FC Votage	, , , ,		years of aging				''	
FC Votage	FF0 . I'	.,	Vcc=5V	0		4.2	V	
Teq.uency Stability Versus Operating Temperature Range	EFC voltage	V _c					V	
Versus Operating Temperature Range	EFC Slope				positive			
O.5 m/s max. ±10	Frequency Stability		rof 250C oir flow					Cooordoring
Initial Tolerance	Versus Operating Temperature Range			±10			ppb	
Vs ref Vcc typ ±2.0 ppb	Initial Tolerance	(f-f0)/f0			±0.1		ppm	momation
1kHz vibration BW (for 0 - 2kHz BW) consult DEI)	Versus supply voltage							
Consult DEI) Consult DEI) Entrace Consult DEI) Entrace Consult DEI) Entrace Entr								
Consult DEI	G – sensitivity			±0.2	±1.0		ppb/G	
Aging Per Day after 30 days of operation ±0.5 ppb 100MHz see ordering information	•						''	
Aging Per Day Aging 1st Year Aging 1st Year Allan Variance 1s 10 50 e-12 100MHz 100Hz	.							
Aging 1st Year Allan Variance 1s 10 50 e-12 100MHz 10Hz 10Hz 100Hz 10	Retrace					±10	ppb	100MHz
Aging 1st Year	Aging Per Day			+0.5			nnh	100MHz see
Allan Variance 1s 10 50 e-12 100MHz 10Hz -105 -90 dBc/Hz 100Hz -135 -115 dBc/Hz 10kHz -150 -140 dBc/Hz 10kHz -158 -150 dBc/Hz 10kHz -150 dB	A Ast V						PPD	
10Hz	Aging 1 Year		operation	±0.05			ppm	information
10Hz	Allan Variance		1s	10		50	e-12	100MHz
SSB Phase noise 1kHz			10Hz	-105		-90	dBc/Hz	
10kHz						-115		
Environmental, Mechanical Conditions Airflow velocity Operating temperature range See ordering information Storage temperature range Huchanical shock Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Humidity Non-condensing 95% Power Voltage Control Voltage Vibration 100kHz -158 -150 dBc/Hz -	SSB Phase noise							
Environmental, Mechanical Conditions Airflow velocity 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 half sine pulse, 1ms – option) Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Humidity Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz								VCC=5V
Airflow velocity 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 half sine pulse, 1ms – option) Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Humidity Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage Vibration Oscilotary information One of the sine pulse, 1ms – option) Hand solder only – not reflow compatible. 260oC 10s (on pins) Non-condensing 95% Oscilotary information Occilotary i	Environmental Mechanical Conditions		IUUK⊓Z	-158		-150	ubt/HZ	
Operating temperature range See ordering information -60°C to 85°C Mechanical shock Per MIL-STD-202, 30G half sine pulse, 11ms (500G half sine pulse, 1ms – option) Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage Vibration See ordering information -60°C to 85°C Per MIL-STD-202, 30G half sine pulse, 11ms (500G half sine pulse, 1ms – option) Hand solder only – not reflow compatible. 260oC 10s (on pins) Non-condensing 95% -0.5V to Vcc+20% -0.5V to Vcc+20% Per MIL-STD-202, 10G swept sine 0 to 2000Hz	<u> </u>	0.5 m/s m	aximum					
Storage temperature range -60°C to 85°C Mechanical shock Per MIL-STD-202, 30G half sine pulse, 11ms (500G half sine pulse, 1ms – option) Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz	Operating temperature range							
Soldering conditions Hand solder only – not reflow compatible. 260oC 10s (on pins) Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz	Storage temperature range	-60°C to 85°C						
Humidity Non-condensing 95% Power Voltage -0.5V to Vcc+20% Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz	Mechanical shock							
Power Voltage -0.5V to Vcc+20% Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz								
Control Voltage -0.5V to 6V Vibration Per MIL-STD-202, 10G swept sine 0 to 2000Hz								
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				0 to 2000	Hz			
	Washing Conditions							



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C7 LC' ' % 5 K Ultra Low Power High Frequency High Stability Miniature OCXO

Ordering Information

OCXO3319AW	ı	100MHz	ı	Х	Χ	Х	Х	Х
Group				01	02	03	04	05

For example, OCXO3319AW-100MHz-1-1-2-2-2 denotes the OCXO has the following specifications:

Temperature Range: 0°C to +50°C

Stability Over Temperature: ±5ppb

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

Supply Voltage: 5V

Output: Sinewave

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	±5ppb	1			
2	±10ppb	1,2,3,4,5,6	1		
3	±20ppb	1,2,3,4,5,6,7,8	1,2,3,4		
4	±30ppb	1,2,3,4,5,6,7,8	1,2,3,4,5		
5	±50ppb	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8		
6	±100ppb	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	Speci	Specification			
1	0.1/0.015				
2	0.2/0.02				
3	0.3/0.03				
4	0.5/0.05	For frequency range of 30-150 MHz			
5	1/0.1				
6	1.5/0.15				
7	2/0.2				
8	3/0.3	For frequency range of 150-300 MHz			
9	5/0.5				

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

05	Output			
Code	Specification			
1	HCMOS/TTL			
2	Sinewave			