



Features and Benefits

- Very small sizes
- Ultra low power consumption: 0.23W at +25°C
- Very high mechanical strength: to up 500G, 1 ms shocks
- Vibration 30G to 2000Hz sine
- High frequency stability: to ± 10 ppb over -40°C to 85°C
- Fast warming up: to 60s –typical, 30s – optionally
- Operational frequency range: 8 – 100 MHz

Description

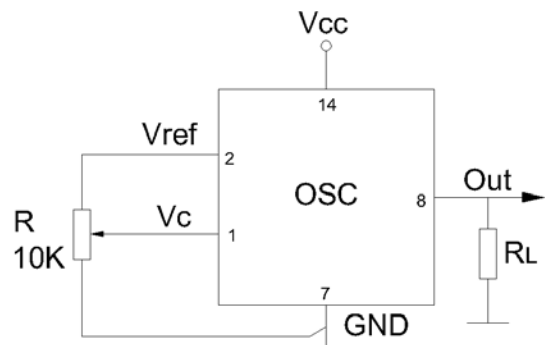
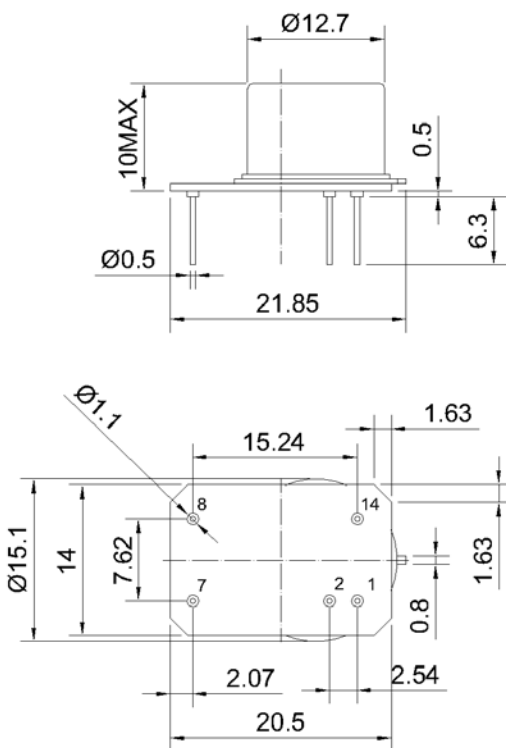
The OCXO3315C series uses the internal heating resonator (IHR) technology with arrangement of the whole oven system together with the crystal plate inside the TO-8 vacuum holder. Such approach results in radical reduction of the OCXO sizes, power consumption and its warm-up time providing at that excellent temperature stability, low phase-noise and 0.1ppb/day aging.

Typical Applications

- Portable and battery fed wireless
- Mobile test equipment
- Beacons & Rescue systems
- Equipment working at severe mechanical factors

Mechanical Drawing & Pin Connections

Drawing No: MD140029-1



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

Unit : mm



Specifications

OCXO Specification		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Frequency Range		F ₀		8		100	MHz	
RF Output								
HCMOS (TTL) Option	Load			10			Kohm	
	H-Level Voltage	V _H	V _{cc} =5V V _{cc} =3.3V	3.8 2.4		15	pF V	
	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			+8		dBm	
	Load	R _L		45	50	55	Ohm	
	Harmonics Level					-25	dBc	
Sub-harmonics Level				None				
Power Supply								
Voltage		V _{cc}		4.75	5.0	5.25	V	3.3V available
Power Consumption			Steady-state @ +25°C Warm-up		0.23 1.0		W	
Warm-up Time			To Δf/f = 1e-7, at 25°C, V _{cc} =5V To Δf/f = 1e-7, at 25°C, V _{cc} =3.3V	30 40	60 70		s	Ref. frequency after 15 min. for 10MHz
							s	
Frequency Control								
Control Voltage		V _c	V _{cc} =5V V _{cc} =3.3V	0 0		4.2 2.8	V	Tuning slop-positive
Tuning Range				+/-0.5	+/-1		ppm	
Reference Voltage		V _{ref}	V _{cc} =5V V _{cc} =3.3V	4.1 2.7	4.2 2.8	4.5 2.9	V	
Frequency Stability								
Vs. Operating Temperature Range			-30°C to +70°C		+/-50		ppb	See ordering section
Vs. Supply Voltage Change			Ref. V _{cc} typ.		+/-2		ppb	
Vs. Acceleration			Worst direction	+/-0.5		+/-1	ppb/G	
Aging	Per Day		After 30 days of operation		+/-0.5		ppb	See ordering section
	Per Year				+/-0.05		ppm	
Phase Noise								
Phase Noise			@1Hz @10Hz @100Hz @1KHz @10KHz	-97/- -130/-95 -152/-125 -162/-155 -165/-165	-95 -125/-90 -145/-120 -155/-150 -162/-162		dBc/Hz	For 10MHz/100MHz operational frequency
Environmental								
Operating Temperature Range		See ordering section						
Storage Temperature Range		-60°C to +90°C						
Humidity		Non-condensing 95%						
Mechanical Shock		Per MIL-STD-202, 500G half sine pulse, 1ms						
Vibration		Per MIL-STD-202, 30G swept sine 10 to 2000Hz						
Soldering Conditions		260°C 10s						



Ordering Information

OCXO3315C	-	x	x	x	x	x	-	xx MHz
Group		1	2	3	4	5		

For example, OCXO3315C- -26421-10MHz denotes the OCXO has the following specifications:

- Temperature Range -10°C to +60°C
- Stability Over Temperature ±100ppb
- Aging per day / year 1.5ppb / 0.15ppm
- Supply Voltage 3.3V ±10%
- Output HCMOS
- Frequency 10MHz

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

2	Stability Over Temperature		
Code	Specification	Available temperature range code	
		10MHz	100MHz
1	±5.0 ppb	1 to 2	-
2	±10 ppb	1 to 7	-
3	±20 ppb	1 to 7	1
4	±30 ppb	1 to 7	1 to 2
5	±50 ppb	1 to 7	1 to 7
6	±100 ppb	1 to 7	1 to 7

3	Aging per day/year, ppb/ppm
Code	Specification
1	0.3/0.03 ≤10MHz
2	0.5/0.05 ≤20MHz
3	1/0.1 ≤40MHz
4	1.5/0.15 ≤50MHz
5	2/0.2 ≤100MHz
6	3/0.3 ≤100MHz
7	5/0.5 ≤100MHz

4	Supply voltage
Code	Specification
1	+5V ±5%
2	+3.3V ±5%

5	Output
Code	Specification
1	HCMOS
2	Sine wave +8 dBm typ.

**with same numbers and frequency upper limits for a give daily / yearly aging rate
 *Disclaimer: Not all option choices available across entire frequency range