



Features and Benefits

Frequency range: 8-100MHz
Supply voltage: 3.3V or 5.0V
Steady current: 180mW Typ
Output waveform: HCMOS(TTL) or Sinewave
Frequency stability vs. operating temperature: 5ppb
Aging: 0.015ppm per year
Phase noise@100KHz:-163dBc/Hz
Operating temperature: -40°C to +85°C
Size: 16x15x7.5mm

Typical Applications

Portable Wireless Communications
Mobile Test equipment
Beacons & Rescue systems
Battery Powered Applications

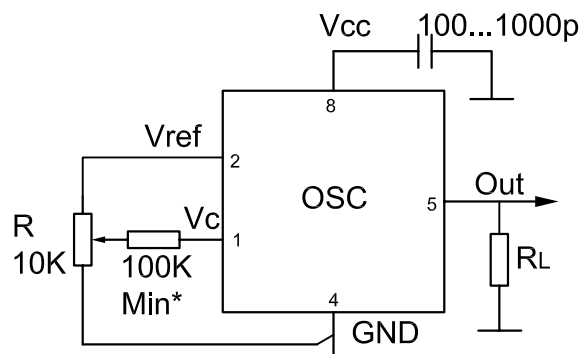
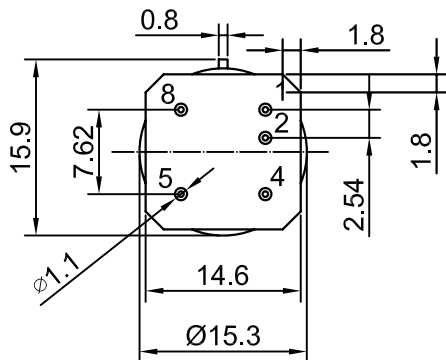
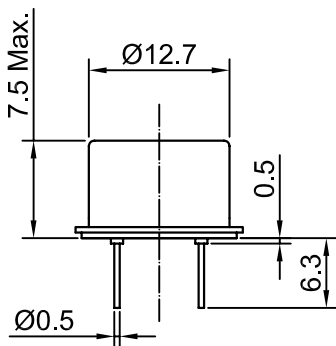
Description

The crystal plate inside the TO-8 vacuum holder. Such approach results in radical reduction of the OCXO sizes, power consumption and warm-up time. In spite of very small sizes and extremely low power consumption these oscillators exhibit excellent frequency stability and low phase-noise level comparable with that of the high-end conventional OCXO designs.

Mechanical Drawing & Pin Connections

Drawing No: MD200049-1

Physical dimensions



* Required for some version

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

Unit in mm
1mm = 0.0394 inches

Notes:

1. The 7.5mm height not for all frequencies. Please contact us for the detail information.
2. We reserves the right to reduce the external dimensions without changing of connecting dimensions.



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range	F _{nom}		8		100	MHz	
RF Output							
Signal Waveform			HCMOS(TTL) option				
Load	R _L		10kohm//5pf (10kohm//15pf)				100MHz(10MHz)
H-Level Voltage	V _H	V _{cc} =5V	3.7			V	
		V _{cc} =3.3V	2.4			V	
L- Level Voltage	V _L				0.4	V	
Duty Cycle			45		55	%	
Rise/Fall time				10/3		ns	10MHz/100MHz
Signal Waveform			Sinewave option				
Level		V _{cc} =5V	+7			dBm	
		V _{cc} =3.3V	+4				
Load				50		ohm	
Harmonics					-25	dBc	
Sub-Harmonics			none				dBc
Power Supply							
Reference Voltage	V _{ref}	V _{cc} =5V	4.0	4.2	4.3	V	
		V _{cc} =3.3V	2.7	2.8	2.9	V	
Supply Voltage	V _{cc}		4.75	5.0	5.25	V	
			3.15	3.3	3.45		
Warm-up Time	T _{up}	at +25°C to Δf/f=1e-7	30	60		sec	ref. to freq. after15 min. of operation
		at +25°C to Δf/f=1e-8		120		sec	
Power Consumption		Steady state, +25°C		180		mW	10MHz, -40C - +85C
		Warm-up			1200	mW	
Frequency Adjustment Range							
Electronic Frequency Control (EFC)		Compliance with 10 years of aging	From ±0.3 to ±1.0			ppm	
EFC voltage	V _c	V _{cc} =5V	0		4.2	V	
		V _{cc} =3.3V	0		2.8	V	
EFC Slope			positive				
Frequency Stability							
Versus Operating Temperature Range		ref. 25°C, air flow 0.5 m/s max.	±10			ppb	See ordering information
Initial Tolerance	(f-f ₀)/f ₀	+25°C, V _c =0.5*V _{ref}		±0.1		ppm	
Versus supply voltage		ref V _{cc} typ		±2		ppb	
G – sensitivity		worst direction, 0 – 1kHz vibration BW (for 0 – 2kHz BW consult the factory)	±0.2	±1.0		ppb/G	
Retrace		24h work after 24h off			±10	ppb	10MHz
Aging Per Day		after 30 days of operation	±0.1			ppb	10MHz see ordering information
Aging 1 st Year			±0.015			ppm	
Allan Variance		1s	5		30	e-12	10MHz
SSB Phase noise		1Hz	-100/---		-85/---	dBc/Hz	10/100MHz V _{cc} =5V
		10Hz	-130/-95		-115/-85	dBc/Hz	
		100Hz	-148/-125		-143/-115	dBc/Hz	
		1kHz	-155/-150		-150/-145	dBc/Hz	
		10kHz	-163/-163		-160/-158	dBc/Hz	
		100kHz	-163/-163		-160/-160	dBc/Hz	
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						
Soldering conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)						
Humidity	Non-condensing 95%						
Power Voltage	-0.5V to V _{cc} +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

OCXO3320AW	-	100MHz	-	x	x	x	x	x
Group				01	02	03	04	05

For example, OCXO3320AW-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
1	±5ppb	1,2
2	±10ppb	1,2,3,4,5,6,7
3	±20ppb	1,2,3,4,5,6,7,8
4	±30ppb	1,2,3,4,5,6,7,8
5	±50ppb	1,2,3,4,5,6,7,8
6	±100ppb	1,2,3,4,5,6,7,8

03	Aging per day/per year,ppb/ppm	
Code	Specification	
1	0.1/0.015	(available for temperature range 1,2,3,4,5) ≤10MHz
2	0.2/0.02	≤10MHz
3	0.3/0.03	≤10MHz
4	0.5/0.05	≤20MHz
5	1/0.1	≤40MHz
6	1.5/0.15	≤50MHz
7	2/0.2	≤120MHz
8	3/0.3	≤120MHz
9	5/0.5	≤150MHz

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

05	Output
Code	Specification
1	HCMOS/TTL
2	Sinewave