



### Features and Benefits

- Frequency range: 8MHz to 100MHz
- Very low power consumption up to 70mW at +25°C
- High frequency stability(less than ±10ppb over -40°C to +85°C)
- Very fast warming-up (up to 30s)
- Very low phase-noise level (-165dBc/Hz, floor)
- Low aging (to 0.1ppb/day, 0.015ppm/year)
- Fundamental operation at up to 100MHz

### Typical Applications

- Portable Wireless Communications
- Mobile Test Equipment
- Beacons and Rescue Systems
- Battery Powered Applications

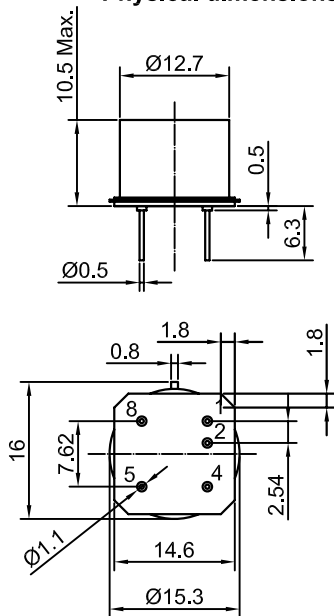
### Description

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

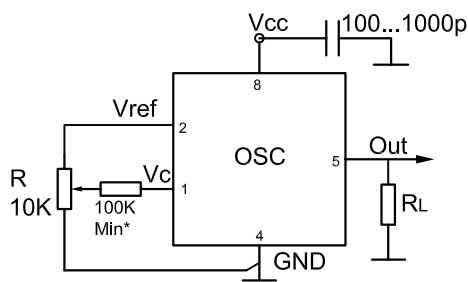
Drawing No: MD140038-4

Physical dimensions



Note: We reserves the right to reduce the external dimensions without changing of connecting dimensions.

Schematic connections



\*Required for some versions

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

Unit in mm  
1mm = 0.0394 inches



**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	$f_0$		8		100	MHz	
Initial Tolerance	$(f-f_0)/f_0$	+25°C, $V_C=0.5*V_{ref}$		±0.1		ppm	
<b>RF Output</b>							
Sine-wave	Level	$V_{CC}=5V$ $V_{CC}=3.3V$	+7 +4			dBm	
	Load	$R_L$		50		Ohm	
	Harmonics Level				-25	dBc	
Sub-harmonics level			None				
HCMOS (TTL)	Load		10		15/5	Kohm pF	10/100MH z
	High Level Voltage	$V_H$ $V_{CC}=5V$ $V_{CC}=3.3V$	3.7 2.4			V	
	Low Level Voltage	$V_L$			0.4	V	
	Duty Cycle		45		55	%	
	Rise/Fall Time				10/3	ns	10/100MH z
<b>Power Supply</b>							
Voltage	$V_{CC}$		4.75 3.15	5.0 3.3	5.25 3.45	V	
Power Consumption		Warm-up			1200	mW	10MHz, -40° C to +85° C
		Steady-state, +25°C		90			
Warm-up Time:	$T_{up}$	At+25° C to $\Delta f/f=1e-8$ At+25° C to $\Delta f/f=1e-7$	30	120 60		s	ref. frequency after 15 min operation.
<b>Frequency Control</b>							
Control Voltage Range	$V_c$	$V_{CC}=5V$ $V_{CC}=3.3V$	0 0		4.2 2.8	V	
Tuning Range		Compliance with 10 years of aging	±0.3	±1.0		ppm	Positive slope
Reference Voltage Output	$V_{ref}$	$V_{CC}=5V$ $V_{CC}=3.3V$	4.0 2.7	4.2 2.8	4.3 2.9	V	
<b>Frequency Stability</b>							
Versus Temperature		ref 25°C air flow 0.5m/s Max.	±10			ppb	See ordering code
Versus Supply Voltage		Ref $V_{CC}$ typ.		±2		ppb	
G- sensitivity		Worst direction, 0-1KHz vibration BW	±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	See ordering code
	First Year		±0.015			ppm	
SSB Phase Noise *Note1		1Hz	-100/--		-85/--	dBc/Hz	10MHz/ 100MHz $V_{CC}=5V$
		10 Hz	-130/-95		-115/-85		
		100 Hz	-148/-125		-143/-115		
		1 KHz	-155/-150		-150/-145		
		10 KHz	-163/-163		-160/-158		
		100 KHz	-163/-163		-160/-160		
Allan Variance		1s	5		30	e-12	10MHz



<b>Environmental Conditions</b>	
Operating Temperature range	-40°C to +85°C(See ordering code)
Storage Temperature range	-60°C to +85 °C
Airflow Velocity	0.5 m/s maximum
Power Voltage	-0.5V to V <sub>CC</sub> +20%
Control Voltage	-0.5V to +6V
Humidity	Non-condensing 95%
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms
Vibration	Per MIL-STD-202, 10G swept sine 0 to 2000 Hz
Soldering Condition	Hand solder only – not reflow compatible 260°C 10s (on pins)
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage

\* Note1: The detail value is subject to quotation \* Note1: The detail value is subject to quotation



**Ordering Information**

OCXO3317AW	-	xxMHz	-	01	02	03	04	05	06
Group				Code					

For example, OCXO3317AW-100MHz-2-4-7-1-1 denotes the OCXO has the following specifications:

Frequency 100MHz  
 Temperature Range -10°C to +60°C  
 Stability Over Temperature ±10ppb  
 Aging per day / year 2ppb / 0.2ppm  
 Supply Voltage 3.3V ±10%  
 Output HCMOS

01	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
8	-60°C..+85°C

02	Stability Over Temperature		
Code	Specification	Available temperature range code	
		10MHz; 5V	100MHz; 5V
1	±3.0 ppb	-	-
2	±5.0 ppb	1 to 2	-
3	±10 ppb	1 to 7	-
4	±20 ppb	1 to 8	1
5	±30 ppb	1 to 8	1 to 2
6	±50 ppb	1 to 8	1 to 5
7	±100 ppb	1 to 8	1 to 8

03	Aging per day/year, ppb/ppm	
Code	Specification	
1	0.1/0.015*	≤10MHz
2	0.2/0.02	
3	0.3/0.03	
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	5.0V±5%

05	RF Output
Code	Specification
1	HCMOS
2	Sine-wave

\*Available for temperature 1 to 5

**Note: Deviation of the parameters is possible on customer's requirements. Please consult us.**