



Features

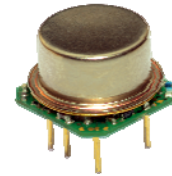
- Miniature DIP8 sizes
- Very low power consumption (to 0.15W at +25°C)
- High frequency stability (to ± 5 ppb over -40°C to 85°C)
- Very fast warming-up (to 15 s)
- Very low phase-noise level (-173 dBc/Hz, floor)
- Low aging (to $\pm 2 \times 10^{-10}$ /day, $\pm 3 \times 10^{-8}$ /year)
- Fundamental operation at up to 150 MHz

Typical Applications

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

8DIP compatible

NEW!



RoHS compliant

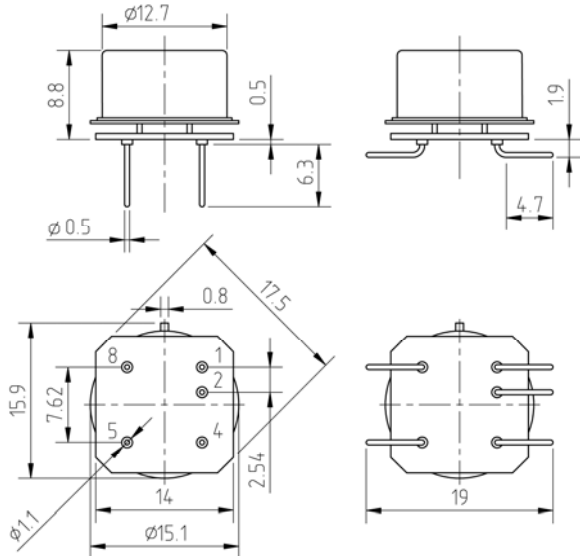
Description

The MXO37 series utilizes the internal heating resonator technology (IHR) with arrangement of the 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 warm-up time. Compared with the basic MXO37/8 series the new model contains improved oscillator circuitry providing operation at higher fundamental frequencies at substantially better temperature stability and lower phase-noise level. The MXO37/8P is excellent solution for various portable or/and battery fed applications with elevated requirements to frequency stability and phase-noise of the OCXO.

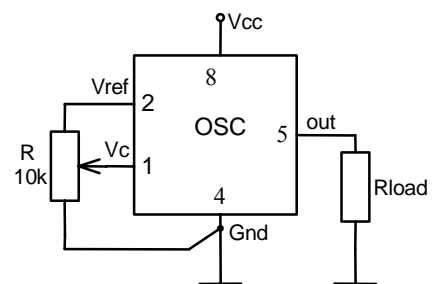
Physical Dimensions

MXO37/8P

MXO37/8PS



Pin Connections



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

Specification

Very low power high stability low phase-noise miniature OCXO

Parameter	Sym.	Conditions	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency range	f_0		8		150	MHz	Fundamental operation
RF output							
HCMOS (TTL) option	Load		10		15	kOhm	
	H-level voltage	V_H	3.8			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	+6	+8	+10	dBm	
	Load	R_L		50		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		Warm-up state Steady state, +25°C		0.7 0.15		W W	
Warm-up time	t_{up}	to $\Delta f/f=1e-7$, at +25°C	15	45		s	ref. to frequency after 10 min.
Frequency control							
Control voltage range	V_c	$V_{cc}=5V$ $V_{cc}=3.3V$	0 0		4.2 2.8	V V	Tuning slope - positive (standard option)
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	4.3 2.9	V V	
Frequency stability							
vs. temperature		-40°C to +85°C, ref 25°C			± 5	ppb	See chart below
vs. supply voltage		ref V_{cc} typ.		± 2		ppb	
vs. acceleration		Worst direction	± 0.5		± 1	ppb/G	
SSB Phase noise		1 Hz	-100	-95		dBc/Hz	For 10 MHz operational frequency.
		10 Hz	-130	-125			
		100 Hz	-150	-145			
		1 kHz	-160	-155			
		10 kHz	-170	-165			
		100 kHz	-173	-168			
Allan variance		1 s		20		e-12	
Aging	per day	after 30 days of operation		± 0.5		ppb	See chart below
	first year			± 0.05		ppm	
Environmental, mechanical conditions.							
Operating temperature range	See chart below.						
Storage temperature range	-60°C to +90°C						
Humidity	Non-condensing 95%						
Mechanical shock	Per MIL-STD-202, 30G half sine pulse, 11ms						
Vibration	Per MIL-STD-202, 10G swept sine 10 to 2000 Hz						
Soldering conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)						

Ordering code

MXO37	/8P	-	C	58	C	5	S	-	10 MHz
1	2		3	4	5	6			

1	Packaging type	
Code	Case	
/8P	8 DIP	
/8PS	8 DIP SMD	

2	Temperature range	
Code	Specification	
A	0°C..50°C	
B	-10°C..60°C	
C	0°C..70°C	
D	-20°C..70°C	
E	-30°C..70°C	
F	-40°C..85°C	

3	Stability over temperature			
Code	Specification	Temperature range code available		
		10 MHz	100 MHz	
XZ	$\pm X_e-Z$			
39	$\pm 3e-9$	A...B	-	
59	$\pm 5e-9$	A...F	-	
18	$\pm 1e-8$	A...F	A	
28	$\pm 2e-8$	A...F	A...E	
58	$\pm 5e-8$	A...F	A...F	
17	$\pm 1e-7$	A...F	A...F	

4	Aging			Frequency
Code	Per day	First year		
B	0.2 ppb	0.02 ppm	Below 50 MHz	
Z	0.3 ppb	0.03 ppm		
C	0.5 ppb	0.05 ppm		
D	1.0 ppb	0.1 ppm		
E	1.5 ppb	0.15 ppm		
F	2.0 ppb	0.2 ppm	Above 50 MHz	
G	3.0 ppb	0.3 ppm		
H	5.0 ppb	0.5 ppm		

5	Supply voltage	
Code	Specification	
3	3.3V \pm 5%	
5	5V \pm 5%	

6	Output	
Code	Specification	
T	HSMOS/TTL	
S	Sine-wave	

Deviation of the parameters is possible on customers' requirements.