



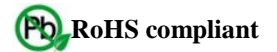
Features

High Stability (up to $\pm 3 \times 10^{-9}$ over -40°C to $+85^{\circ}\text{C}$)
 Low Phase Noise (-165 dBc/Hz, TYP, floor)
 Low Aging
 Wide Frequency Range: 5 to 250 MHz
 Compact Package

Typical Applications

GPS Receivers
 Cellular Base Stations
 Instrumentation
 Stratum 3E clock systems
 VSAT, INMARSAT

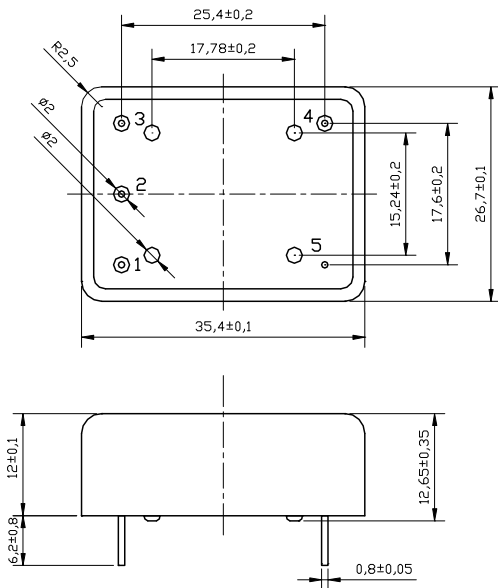
Packaging type E: "Europack" 36x27x12.7mm



Description

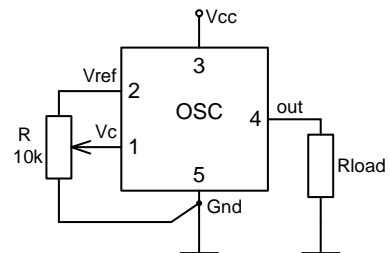
The MXOC series oven-controlled crystal oscillators are intended for wide applications where high temperature stability, low aging, low phase-noise along and compact sizes are major requirements. The module approach to the OCXO design allowed providing the same performance in a variety of small packages (MXOCE, MXOCI, MXOCR, MXOCS models). The OCXOs of MXOC series are produced for 5-250 MHz range, for above 30 MHz - using internal multiplication circuitry.

Physical Dimensions



For some combinations of parameters 13.35mm or 16.25 height of package can be used

Pin Connections



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

Specification
MXOC Series High Stability Low Phase-Noise OCXO

Parameter	Sym.	Conditions	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency range	f_0		5		250	MHz	
RF output							
HCMOS (TTL) option	Load		10		15	kOhm pF	for 10 MHz operational frequency
	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	
Sine-wave option	Level	L	+6	+8	+10	dBm	for 10 MHz operational frequency
	Load	R_L			50	Ohm	
	Harmonics level					dBc	
Sub-harmonics level		Operational frequency <30 MHz Operational frequency ≥30 MHz		none		dBc	Internal frequency multiplication used
Power supply							
Voltage	V_{cc}		4.75	5.0	5.25	V	3.3V, 12V optional
Power consumption		Warm-up state Steady state, +25°C		3.2 1	3.5 1.2	W	Low power consumption option possible per request
Warm-up time	t_{up}	to $\Delta f/f=1e-7$, at +25°C			180	s	ref. to frequency after 30 min.
Frequency control*							
Control voltage range	V_c	$V_{cc}=5$ or 12 V $V_{cc}=3.3$ V	0 0		4.2 2.8	V	Positive tuning slope (standard option)
Tuning range			±0.5	±1		ppm	
Reference voltage	V_{ref}	$V_{cc}=5$ or 12 V $V_{cc}=3.3$ V	4.1 2.7	4.2 2.8	4.3 2.9	V	
Frequency stability							
vs. temperature		-30°C to +70°C, ref 25°C		±10		ppb	See chart below
vs. supply voltage		ref Vcc typ.		±1		ppb	
vs. acceleration		Worst direction			±1	ppb/G	
SSB Phase noise		1 Hz		-95		dBc/Hz	tor 10MHz operational frequency
		10 Hz		-125			
		100 Hz		-145			
		1 kHz		-155			
		10 kHz		-165			
Allan variance		1 s		10		e-12	
Aging	per day	after 30 days of operation			±0.5	ppb	Standard option S (see chart below)
	first year				±50	ppb	
	for 10 years				±0.5	ppm	
Environmental, mechanical conditions.							
Operating temperature range	-30°C to +70°C Standard. Other options - see chart below.						
Storage temperature range	-60°C to +90°C						
Humidity	Hermetically sealed						
Mechanical shock	Per MIL-STD-202, 30G half sine pulse, 11ms						
Vibration	Per MIL-STD-202, 5G swept sine 10 to 500 Hz						
Soldering conditions	260°C 10s						

* No frequency control option – on customer requirement

Ordering code

MXOCE	-	C	18	S	5	T	-	10 MHz
		1	2	3	4	5		

1 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

2		
Code	Specification	Temperature range code available (for 10MHz)
XZ	±Xe-Y	
19	±1e-9	A...B
29	±2e-9	A...E
39	±3e-9	A...F
59	±5e-9	A...F
18	±1e-8	A...F
28	±2e-8	A...F
58	±5e-8	A...F
17	±1e-7	A...F

3 Aging			
Code	Specification	Per day*	First year*
L	Relaxed	1 ppb	100 ppb
S	Standard	0.5 ppb	50 ppb
P	Improved	0.3 ppb	30 ppb

* for 10 MHz operational freq.

4 Supply voltage	
Code	Specification
3	3.3V±5%
5	5V±5%
2	12V±10%

5 Output	
Code	Specification
T	HSMOS/TTL
S	Sinewave

Deviation of the parameters is possible on customers' requirements.

YOU ARE WELCOME TO CONTACT US: By mail: Second Teplovovnaya Street, build. 2, Omsk, Russia, ZIP code: 644039. P.O.Box : 2313, ZIP code: 644046, Omsk, Russia. By Fax & Telephone: +7 (3812)433-967, 433-968 By E-mail: mxl@mxtal.ru Our website: www.magicxtal.com