



MV360M

Double Oven Ultra Precision OCXO
With Digital Frequency Control 10 MHz

Revised 11/15/18

Your dedicated source for crystal oscillators and filters.

New

Features

- High Stability vs. Temperature: up to $\pm 3 \times 10^{-11}$
- **Digital Frequency Control**
- Package size: 50.8 x 50.8 x 19 mm
- Long Term Stability: up to $\pm 1 \times 10^{-8}$ /year
- Sinewave
- +12V and +5V

Applications

- 5G
- Test equipment
- Network clock
- Base station

Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher*	
0 to +55° C	$< \pm 1 \times 10^{-10}$	$< \pm 3 \times 10^{-11}$	
-10 to +60° C	$< \pm 1 \times 10^{-10}$	$< \pm 3 \times 10^{-11}$	
-20 to +70° C	$< \pm 1 \times 10^{-10}$	$< \pm 3 \times 10^{-11}$	
-40 to +70° C	$< \pm 1 \times 10^{-10}$	$< \pm 3 \times 10^{-11}$	
-40 to +85° C *	$< \pm 1 \times 10^{-10}$	$< \pm 3 \times 10^{-11}$	

* +5V only (+12V available $< \pm 1.25 \times 10^{-8}$ to +75°...+85°. Contact factory.)

Standard Frequencies	Long Term Stability (Yearly Aging) Availability		Comments
	High	Higher	
10 MHz	$< \pm 5 \times 10^{-8}$	$< \pm 1 \times 10^{-8}$	

Contact factory for non-standard long term stability performance and see ordering designations at the end of this data sheet.

Specification	Short Term, Pulling & Pushing Stability		Comments
	Standard	Option	
Short term stability per 1 sec.	$< 2 \times 10^{-12}$	-	Allan deviation, For 10 MHz
Stability vs. Load ($\pm 5\%$)	$< \pm 1 \times 10^{-11}$	-	
Stability vs. power supply ($\pm 5\%$)	$< \pm 2 \times 10^{-11}$	-	
Warm-up time to w/ in $< \pm 5 \times 10^{-8}$	<15 minutes		@25° C

Specifications-Continued

Phase Noise, 10 MHz, 12V, Sinewave		
Frequency Offset	(dBc/Hz)	Comments
1 Hz	< -100	Contact factory for lower phase noise
10 Hz	< -130	
100 Hz	< -150	
1 kHz	< -150	
10 kHz	< -155	

Contact factory for lower phase noise performance and see ordering designations at the end of this data sheet.

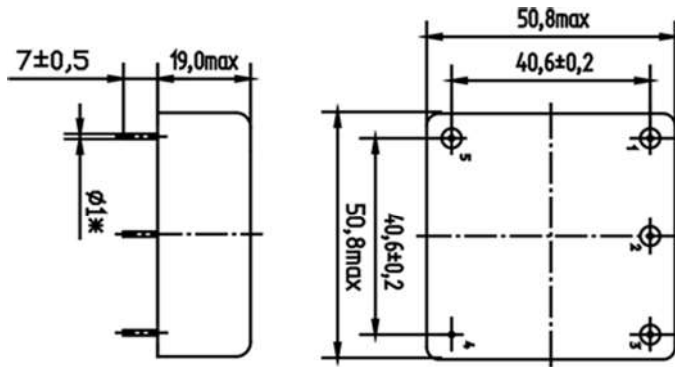
Output Parameters	
Output	Sinewave
Level	> 300 mV
Load	50 Ohms \pm 5%
Rise/Fall Time	-
Harmonics Suppression	< -30 dBc

Power Supply & Voltage Control Parameters		
Specification	5V \pm 5%	12V \pm 5%
Steady state current @ 25° C	< 800 mA	< 300 mA
Peak warm-up current	< 2000 mA	< 1000 mA
Frequencet Adjustment Range	> \pm 2.5E-7	
Digital Control		
DAC Type	LTC2606-1	
Chip Adress	0010000	
Analog Control		
Control Voltage (Positive)	0...4.1V	0...5V
Reference Voltage	4.1 V	5V

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-200 Hz
Vibration Acceleration	5 gs
Shock Acceleration	75 gs
Shock Duration	3 \pm 1 mS
Humidity	98%
Storage Temperature	-55 to +85° C
RoHs	Option

Contact factory for extemdted environmental conditions.

Outline Drawing



Pin	Value
1	SDA
2	SCL
3	RF Out
4	Ground
5	Supply Voltage

*Digital Control via LTC2606-1
16-bit DAC with I²C interface

Ordering Guide

Supply
12 V
5 V

Alan Deviation (ADEV)
$<2 \times 10^{-12}$

MV360M- C 003 D - 12V - 10.0M

Availability of certain stability vs. operating temperature range.		$\pm 1 \times 10^{-10}$	$\pm 5 \times 10^{-11}$	$\pm 3 \times 10^{-11}$
		01	005	003
A	0 to +55° C	A	A	A
B	-10 to +60° C	A	A	A
C	-20 to +70° C	A	A	A
D	-40 to +70° C	A	A	A
EX**	-40 to +85° C	A	A	A

Availability of certain aging values for certain frequencies.		10 MHz
F	$\pm 5 \times 10^{-8}$ /year	A
E	$\pm 3 \times 10^{-8}$ /year	A
D	$\pm 2 \times 10^{-8}$ /year	A
C	$\pm 1 \times 10^{-8}$ /year	A

A=Available, C=Contact factory, NA=Not available

Phase Noise 10 MHz, Sinewave, 12V	dBc/Hz
At offset frequency 1 Hz	<-100
10 Hz	<-130
100 Hz	<-150
1 kHz	<-150
10 kHz	<-155

A=Available, C=Contact factory.

* +5V only (+12V available $<\pm 1.25 \times 10^{-11}$ to +75°...+85°.

Contact factory.)

Additional Notes:

- 1) Contact factory for daily aging values. General rule: $x10^{-x}$ /year = $x10^{-(x+2)}$ /day.
- 2) Advise RoHs requirement at Order.
- 3) Contact factory for non-standard temperature ranges.