

# LOW PROFILE PRECISION OCXO MV200

## Features:

- High stability vs. temperature: up to  $\pm 5 \times 10^{-11}$
- 5V or 12V power supply
- Package height from 16 mm down to 10 mm
- Frequency range 10.0 – 100.0 MHz

Power supply	Output
5V	SIN
12V	HCMOS

Package type	
50.8x50.8x19 mm	Z19
50.8x50.8x16 mm	Z16
50.8x50.8x12.7 mm	Z12.7
50.8x50.8x10 mm	Z10

## ORDERING GUIDE: MV200 - C 2 F - 12V - SIN - Z12.7-10.0 MHz-LN

Availability of certain stability vs. operating temperature range (for 10 MHz, height 12,7 mm)		$\pm 5 \times 10^{-9}$	$\pm 3 \times 10^{-9}$	$\pm 2 \times 10^{-9}$	$\pm 1 \times 10^{-9}$	$\pm 5 \times 10^{-10}$	$\pm 2 \times 10^{-10}$	$\pm 1 \times 10^{-10}$	$\pm 5 \times 10^{-11}$
		5	3	2	1	05	02	01	005
A	0...+55°C	A	A	A	A	A	A	A	A
B	-10...+60°C	A	A	A	A	A	A	A	NA
C	-20...+70°C	A	A	A	A	A	A	C	NA
D	-40...+70°C	A	A	A	A	A	C	NA	NA
EX	-40...+85°C	A	A	A	A	A	C	NA	NA

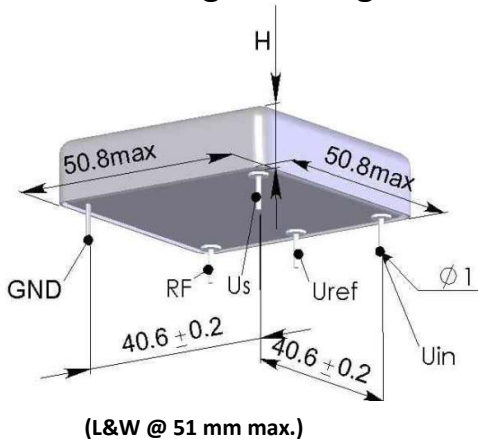
A – available, C – consult factory

For other temperature ranges see designation at the end of Data Sheet.

Availability of certain aging values for certain frequencies		Standard frequencies				
		10.0 MHz (10.0 x k) MHz	12.8 MHz (12.8 x k) MHz	13.0 MHz (13.0 x k) MHz	16.384 MHz (16.384 x k) MHz	20.0 MHz (20.0 x k) MHz
H	$\pm 2 \times 10^{-7}$ /year	NA	NA	NA	A	A
G	$\pm 1 \times 10^{-7}$ /year	A	A	A	A	C
F	$\pm 5 \times 10^{-8}$ /year	A	A	A	C	NA
E	$\pm 3 \times 10^{-8}$ /year	A	A	C	NA	NA
D	$\pm 2 \times 10^{-8}$ /year	A	C	NA	NA	NA
C	$\pm 1 \times 10^{-8}$ /year	A	C	NA	NA	NA

A – available, NA – not available, C – consult factory

## Package drawing:



(L&W @ 51 mm max.)

H=19 mm for Z19; H=16 mm for Z16;  
H=12.7 mm for Z12.7; H=10 mm for Z10.

Phase noise, dBc/Hz, for 10 MHz		LN	ILN	ULN*
		For 12 V. SIN		
1 Hz	<-95	<-100	<-103	<-108
10 Hz	<-125	<-130	<-133	<-137
100 Hz	<-145	<-153	<-155	<-157
1000 Hz	<-150	<-158	<-160	<-161
10000 Hz	<-155	<-160	<-161	<-162

Short term stability (Allan deviation) per 1 sec (for 10MHz)	< $5 \times 10^{-12}$ ; opt. < $1 \times 10^{-12}$ opt. < $6 \times 10^{-13}$ *
Frequency stability vs. load changes	< $\pm 5 \times 10^{-10}$ ; opt. < $\pm 2 \times 10^{-10}$
Frequency stability vs. power supply changes	< $\pm 5 \times 10^{-10}$ ; opt. < $\pm 2 \times 10^{-10}$
Warm-up time within accuracy of < $\pm 2 \times 10^{-8}$ @ 25°C	<3 min
Power supply (Us)	12V±5%    5V±5%
Steady state current consumption @ 25°C	<250mA    <500mA
Peak current consumption during warm-up	<550mA    <1500mA
Frequency pulling range	$\geq 4 \times 10^{-7}$
with external voltage range (Uin)	0...5V    0...4.5V
with external potentiometer	20 kOhm
Reference voltage (Uref)	+5 V    +4.5 V

\*for  $\pm 5 \times 10^{-10}$  temperature stability

Output	HCMOS	SIN
Level	<0.5V... >4.0V	>300 mV RMS (up to 9±1dBm - optional for 12V power supply)
Load	10kOhm/30pF	50 Ohm±5%
Rise/Fall time	<6 ns (<3 ns optional)	-
Harmonic suppression	-	>30dBc (>50dBc optional)

## Additional notes:

- Please consult factory for daily aging values. Normally typical correspondence of daily aging per day to aging per year is as following:  $\pm 1 \times 10^{-7}$ /year -  $\pm 1 \times 10^{-9}$ /day;  $\pm 5 \times 10^{-8}$ /year;  $\pm 5 \times 10^{-10}$ /day;  $\pm 3 \times 10^{-8}$ /year;  $\pm 3 \times 10^{-10}$ /day.
- Please mention RoHS requirement (if any) while requesting for quote or while placing PO.
- For non standard operating temperature ranges please use the following two letters designations (first letter for the lower limit, second letter for the upper limit), °C:

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	W	X
-60	-55	-50	-45	-40	-30	-20	-10	0	+10	+30	+40	+45	+50	+55	+60	+65	+70	+75	+80	+85



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Due to continuous development and improvement Morion, Inc. reserves the right to modify design or specifications of its products without prior notice. Revision 10. February 2017