

# LOW PHASE NOISE MINIATURE OCXO WITH LOW G-SENSITIVITY MV389

## Preliminary Information

### Features:

- **Small package:** 25.8x25.8x12.7 mm
- **Low phase noise:** up to -173 dBc/Hz
- **Long term stability:** up to  $\pm 3 \times 10^{-8}$ /year
- **G-sensitivity:** up to  $< 3 \times 10^{-10}$ /g
- **Standard frequency:** 5.0 MHz and 10.0 MHz

### Supply voltage

5 V

12 V

## ORDERING GUIDE: MV389 – C 20 F–12V– 10.0MHz–1-1E-9/G

Availability of certain stability vs. operating temperature range		30	20	10	5
		$\pm 3 \times 10^{-8}$	$\pm 2 \times 10^{-8}$	$\pm 1 \times 10^{-8}$	$\pm 5 \times 10^{-9}$
A	0...+55°C	A	A	A	A
B	-10...+60°C	A	A	A	C
C	-20...+70°C	A	A	A	NA
D	-40...+70°C	A	A	C	NA
EX*	-40...+85°C	A	A	C	NA

\* only for 5V power supply

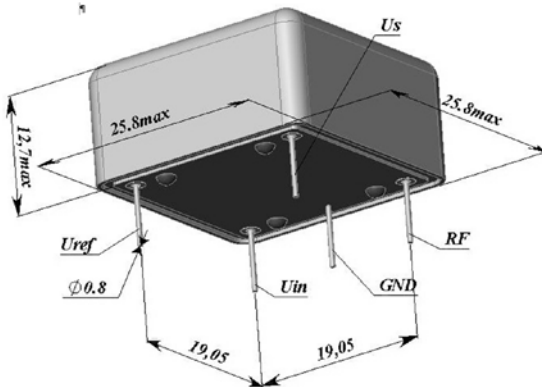
A – available, C – consult factory, NA – not available

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	
G	$\pm 1 \times 10^{-7}$ /year	A	
F	$\pm 5 \times 10^{-8}$ /year	A	
E	$\pm 3 \times 10^{-8}$ /year	C	

Phase noise, dBc/Hz, for 10MHz, SIN	1	2	3
	(12 V only)		
1 Hz	<-95	<-100	<-105
10 Hz	<-125	<-130	<-135
100 Hz	<-158	<-155	<-155
1000 Hz	<-168	<-160	<-160
10000 Hz	<-173	<-165	<-165

### Package drawing:



<b>Vibrations:</b>	
Frequency range	10-500 Hz
Acceleration	5 g

<b>Shock:</b>	
Acceleration	75 g
Duration	3±1 ms

Humidity @ 25 °C	98%
Storage temperature range	-55...+70°C

### Additional notes:

- Please consult factory for daily aging values. Normally typical correspondence of daily 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
- 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

Short term stability (Allan deviation) per 1 sec, for 10 MHz	$< 5 \times 10^{-12}$	
Option (for option 3 of phase noise)	$< 2 \times 10^{-12}$	
G-sensitivity	$< 1 \times 10^{-9}$ /g (1E-9/G)	
Option	$< 5 \times 10^{-10}$ /g (5E-10/G)	
Option	$< 4 \times 10^{-10}$ /g (4E-10/G)	
Option (consult factory)	$< 3 \times 10^{-10}$ /g (3E-10/G)	
Frequency stability vs. load changes (±5%) for 12 V power supply	$< \pm 1.5 \times 10^{-9}$	
Frequency stability vs. power supply changes (±5%)	$< \pm 1.5 \times 10^{-9}$	
Warm-up time within accuracy of $< \pm 2 \times 10^{-8}$ @ 25 °C	$< 5$ min	
Power supply (Us)	12V±5%	5V±5%
Steady state current consumption @ 25°C	< 170 mA	< 400 mA
Peak current consumption during warm-up	< 550 mA	< 1300 mA
Frequency pulling range	$> \pm 4.0 \times 10^{-7}$	$> \pm 3.0 \times 10^{-7}$
Control voltage range (Uin)	0...5 V	0...4.1 V
Reference voltage (Uref)	+5 V	+4.1 V
Output	SIN	
Level	$> 300$ mV $> 600$ mV (for 12V and phase noise option 1)	
Load	50 Ohm±5%	
Harmonics	$> 30$ dBc	