

# DOUBLE OVEN ULTRA PRECISION OCXO MV89

## Features:

- Frequency range 4.096 - 10.0 MHz
- Very high stability vs. temperature - up to  $\pm 5 \times 10^{-11}$
- Very low aging - up to  $\pm 5 \times 10^{-9}$ /year
- Not sensitive for rapid changes of ambient temperature
- Ideal for GPS, CDMA, 3G applications

## ORDERING GUIDE: MV89 – B 01 E – 10.0 MHz

Availability of certain stability vs. operating temperature range		$\pm 3 \times 10^{-10}$	$\pm 2 \times 10^{-10}$	$\pm 1 \times 10^{-10}$	$\pm 5 \times 10^{-11}$
		03	02	01	005
A	0...+55 °C	A	A	A	A
B	-10...+60 °C	A	A	A	A
C	-20...+70 °C	A	A	A	C
D	-40...+70 °C	A	A	C	NA

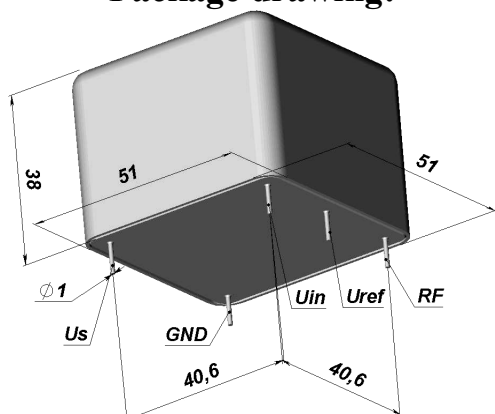
A – available, NA – not available, C – consult factory

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

Availability of certain aging values for certain frequencies		Standard frequencies			
		4.096 MHz	5.0 MHz	8.192 MHz	10.0 MHz
E	$\pm 3 \times 10^{-8}$ /year	A	A	A	A
D	$\pm 2 \times 10^{-8}$ /year	A	A	A	A
C	$\pm 1 \times 10^{-8}$ /year	C	A	C	A
B	$\pm 5 \times 10^{-9}$ /year	C	A	C	A

A – available NA – not available C – consult factory

## Package drawing:



## Mechanical characteristics:

<b>Vibrations:</b>	
Frequency range	1-200 Hz
Acceleration	5g
<b>Shock:</b>	
Acceleration	150 g
Duration	3±1 ms
Storage temperature range	-55...+80 °C

Short term stability (Allan deviation) per 1 s, typical	< $2 \times 10^{-12}$
Frequency stability vs. load changes	< $\pm 1 \times 10^{-10}$
Frequency stability vs. power supply changes	< $\pm 1 \times 10^{-10}$
Warm-up time with accuracy of < $\pm 5 \times 10^{-8}$	< 15 min
Power supply (Us)	12V±5%
Steady state current consumption @ 25°C (still air)	< 350 mA
Peak current consumption during warm-up @ 25°C	< 1.5 A
Frequency pulling range	> $\pm 2.5 \times 10^{-7}$
with external control voltage range (Uin)	0...+5 V
Reference voltage (Uref)	+5V

Output	SIN
Level	+7 ±2 dBm
Load	50 Ohm±5%
Subharmonics (for 8.192, 10.0 MHz)	< -40 dBc
Harmonic suppression	> 30dBc
Phase noise, typical (for 5 MHz)	
1 Hz	-105 dBc/Hz
10 Hz	-130 dBc/Hz
100 Hz	-145 dBc/Hz
1000 Hz	-150 dBc/Hz
10000 Hz	-155 dBc/Hz

## ADDITIONAL NOTES:

- Showed values of frequency stability vs. temperature usually are tested in Still Air test conditions. Please inform factory about different conditions in operation to provide appropriate tests.
- Please consult factory for daily aging values. Normally typical correspondence of daily aging per day to aging per year is as following:  $\pm 5 \times 10^{-8}$ /year -  $\pm 5 \times 10^{-10}$ /day;  $\pm 3 \times 10^{-8}$ /year -  $\pm 3 \times 10^{-10}$ /day;  $\pm 2 \times 10^{-8}$ /year -  $\pm 2 \times 10^{-10}$ /day;  $\pm 1 \times 10^{-8}$ /year -  $\pm 1 \times 10^{-10}$ /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