

# MINIATURE DOUBLE OVEN ULTRA PRECISION OCXO MV209

## Features:

- Frequency range: 5 – 10 MHz
- Low sensitivity to rapid changes of ambient temperature
- Stability vs. temperature: up to  $\pm 5 \times 10^{-11}$
- Short term stability: up to  $1 \times 10^{-12}$  per 1 sec
- Aging: up to  $\pm 1 \times 10^{-8}$ /year
- Standard CO-08 package with size of 36x27x19 mm

Power Supply	
12 V	
5 V	

## ORDERING GUIDE: MV209-B 05 E-10.0 MHz-LN -5E-12-12V

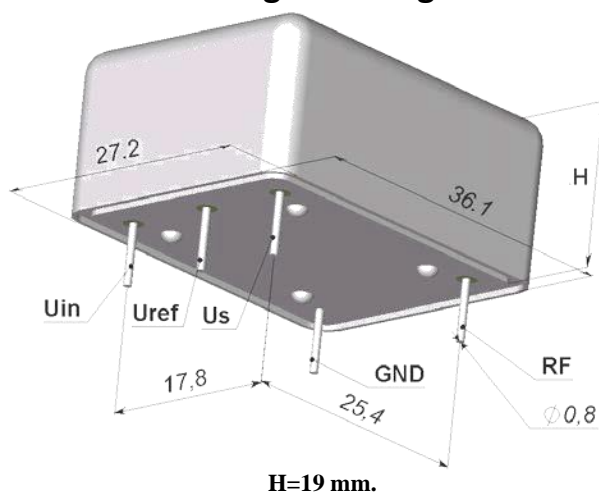
Availability of certain stability vs. operating temperature		$\pm 5 \times 10^{-10}$	$\pm 3 \times 10^{-10}$	$\pm 2 \times 10^{-10}$	$\pm 1 \times 10^{-10}$	$\pm 5 \times 10^{-11}$
		05	03	02	01	005
A	0...+55°C	A	A	A	A	A
B	-10...+60°C	A	A	A	A	A
C	-20...+70°C	A	A	C	C	C
D	-40...+70°C	A	C	C	C	C

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

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

A – available, C – consult factory

## Package drawing:



Phase noise, dBc/Hz, for 10MHz	_*	LN
1 Hz	<-95	<-100
10 Hz	<-125	<-130
100 Hz	<-143	<-148
1000 Hz	<-152	<-155
	<-158	<-160

\* For 5V Only

<b>Vibrations:</b>	
Frequency range	10-500 Hz
Acceleration	10g
<b>Shock:</b>	
Acceleration	150 g
Duration	3±1 ms
Storage temperature range	-55...+80°C

Short term stability (Allan deviation) per 1 sec	< $5 \times 10^{-12}$	< $5 \times 10^{-12}$
	< $2 \times 10^{-12}$	< $2 \times 10^{-12}$
	< $1 \times 10^{-12}$	< $1 \times 10^{-12}$
Frequency stability vs. load changes	< $\pm 1 \times 10^{-10}$	
Frequency stability vs. power supply changes	< $\pm 1 \times 10^{-10}$	
Warm-up time within accuracy of $\pm 5 \times 10^{-8}$ @25°C	<10 min	
Power supply (Us)	12V±5%	5V±5%
Steady state current consumption @ 25°C (still air)	<160mA	<350mA
Peak current consumption during warm-up @ 25°C	<700 mA	<1500mA
Frequency pulling range	> $\pm 4 \times 10^{-7}$	
with external control voltage range (Uin)	0...+5 V	0...+4 V
Reference voltage (Uref)	+5V	+4V
Output	SIN	
Level	> 400 mV RMS	
Load	50 Ohm±5%	
Harmonic suppression	>30dBc	

## 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.
- 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

