

# ULTRA MINIATURE PRECISION OCXO MV199

## Features:

- Ultra miniature package 20.35x20.35x12.7 mm
- High stability vs. temperature: up to  $\pm 1 \times 10^{-9}$
- Long term stability up to  $\pm 3 \times 10^{-8}$ /year
- Available as RoHS
- Frequency range: 8.192 – 20.0 MHz

Power supply	Output
12V	SIN
5V	HCMOS

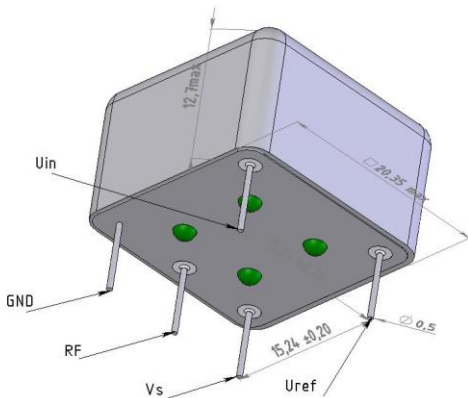
## ORDERING GUIDE: MV199 – C 3 F – 12V – SIN – 10.0 MHz – LN

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

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

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

## Package drawing:



Availability of certain aging values for certain frequencies		Standard frequencies				
		10.0 MHz	12.8 MHz	13.0 MHz	16.384 MHz	20.0 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	C	C	NA	NA

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

Phase noise, dBc/Hz, for 10MHz, SIN	LN	
	For 12V, SIN	
1 Hz	<-95	<-100
10 Hz	<-125	<-130
100 Hz	<-145	<-150
1000 Hz	<-150	<-155
10000 Hz	<-155	<-160

Short term stability (Allan deviation) per 1 sec, for 10 MHz	$< 5 \times 10^{-12}$
Option*	$< 2 \times 10^{-12}$
Frequency stability vs. load changes ( $\pm 5\%$ )	$< \pm 5 \times 10^{-10}$
Frequency stability vs. power supply changes ( $\pm 5\%$ )	$< \pm 5 \times 10^{-10}$
Warm-up time within accuracy of $< \pm 2 \times 10^{-8}$ @ 25 °C	<3 min
Optional*, within accuracy of $< \pm 1 \times 10^{-7}$ @ 25 °C	<1 min

Power supply (Us)	12V $\pm 5\%$	5V $\pm 5\%$
Steady state current consumption @ 25°C	<100 mA	<250 mA
Peak current consumption during warm-up (for "D" temp. range)	<400 mA	<650 mA
Frequency pulling range (for 10 MHz)	$> \pm 4.0 \times 10^{-7}$	
Control voltage range (Uin)	0...5 V	0...4.5V
Reference voltage (Uref)	+5 V	+4.5 V

Vibrations:	
Frequency range	10-500 Hz
Acceleration	5 g
Shock:	
Acceleration	75 g
Duration	3 $\pm 1$ ms
Humidity @ 25 °C	98%
Storage temperature range	-55...+85 °C

Output	HCMOS	SIN
Level	"0" <0.5V "1" >4.0V	>300 mV
Load	10kOhm/30pF	50 Ohm $\pm 5\%$
Rise/Fall time	<6 ns (<3 ns optional)	-
Harmonics	-	>30 dBc

## 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
- 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: