

# HIGH STABILITY MINIATURE OCXO MV291

## Features:

- **Small package:** 1”x1”x0.5” (25x25x12.7 mm)
- **High stability vs. temperature:** up to  $\pm 5 \times 10^{-10}$
- **Long term stability:** up to  $\pm 2 \times 10^{-8}$ /year
- **Available as RoHS**
- **Frequency range:** 10.0 – 20.0 MHz

Power supply	Output
12V	SIN
5V	HCMOS

## ORDERING GUIDE: MV291-C 3 F-12V-SIN-10.0 MHz-LN-7E-13

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

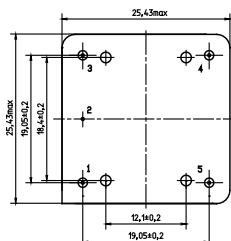
A – available; C – consult factory

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

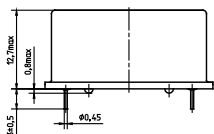
Availability of certain aging values for certain frequencies	Standard frequencies				
	10.0 MHz	12.8 MHz	13.0 MHz	16.384 MHz	20.0 MHz
H $\pm 2 \times 10^{-7}$ / year	NA	NA	NA	A	A
G $\pm 1 \times 10^{-7}$ / year	A	A	A	A	C
F $\pm 5 \times 10^{-8}$ / year	A	A	A	C	NA
E $\pm 3 \times 10^{-8}$ / year	A	C	C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

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

## Package drawing:



1	RF
2	GND
3	Uin
4	Uref
5	Us



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

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

<b>Humidity @ 25 °C</b>	<b>98%</b>
<b>Storage temperature range</b>	<b>-55...+85 °C</b>

Phase noise, dBc/Hz, for 10MHz, SIN	-	LN	ULN
		For 12V, SIN	
<b>1 Hz</b>	<-95	<-100	<-108
<b>10 Hz</b>	<-125	<-130	<-138
<b>100 Hz</b>	<-145	<-150	<-150
<b>1000 Hz</b>	<-150	<-155	<-155
<b>10000 Hz</b>	<-155	<-160	<-160

<b>Short term stability (Allan deviation) per 1 sec, for 10 MHz</b>	<b>&lt;5x10<sup>-12</sup></b>	
<b>Option</b>	<b>&lt;2x10<sup>-12</sup></b>	
<b>Option (only for ULN)</b>	<b>&lt;7x10<sup>-13</sup></b>	
<b>Frequency stability vs. load changes (±5%)</b>	<b>&lt;±5x10<sup>-10</sup></b>	
<b>Frequency stability vs. power supply changes (±5%)</b>	<b>&lt;±2x10<sup>-10</sup></b>	
<b>Warm-up time within accuracy of &lt;±2x10<sup>-8</sup> @ 25 °C</b>	<b>&lt;3 min</b>	
<b>Power supply (Us)</b>	<b>12V±5%</b>	<b>5V±5%</b>
<b>Steady state current consumption @ 25°C</b>	<b>&lt;140 mA</b>	<b>&lt;350 mA</b>
<b>Peak current consumption during warm-up (for “D” temp. range)</b>	<b>&lt;400 mA</b>	<b>&lt;900 mA</b>
<b>Frequency pulling range (for 10 MHz)</b>	<b>&gt;±4.0x10<sup>-7</sup></b>	
<b>Control voltage range (Uin)</b>	<b>0...5 V</b>	<b>0...4.5V</b>
<b>Reference voltage (Uref)</b>	<b>+5 V</b>	<b>+4.5 V</b>
<b>Output</b>	<b>HCMOS</b>	<b>SIN</b>
<b>Level</b>	“0” <0.5V “1” >4.0V	>300 mV
<b>Load</b>	<b>10kOhm/30pF</b>	<b>50 Ohm±5%</b>
<b>Rise/Fall time</b>	<b>&lt;6 ns (&lt;3 ns optional)</b>	
<b>Harmonics</b>	<b>&gt;30 dBc</b>	

## 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:

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