

# HIGH STABILITY MINIATURE OCXO MV333M

## Features:

- Short-term stability (Allan deviation): up to  $5 \times 10^{-13}$
- Low phase noise options: up to  $-120$  dBc/Hz at 1 Hz offset, up to  $-170$  dBc/Hz at 10 kHz offset
- Long term stability: up to  $\pm 2 \times 10^{-8}$ /year
- RoHS compliant
- Standard frequency: 10.0 MHz

Package type	
36x27x16.0 mm	B16
25.8x25.8x12.7 mm	A12.7
Output Type	
SIN	
HCMOS	

## ORDERING GUIDE: MV333M – B 5 F – B16 – SIN - 10MHz – 2 – 8E-13

Availability of certain stability vs. operating temperature range		10	5	3**
		$\pm 10 \times 10^{-9}$	$\pm 5 \times 10^{-9}$	$\pm 3 \times 10^{-9}$
A	0...+55°C	A	A	A
B	-10...+60°C	A	A	A
GS	-20...+65°C	A	A	A
ES	-40...+65°C	A	A	C
D*	-40...+70°C	A	A	NA

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

\* only for package B16 and phase noise option 1

\*\* Only for A12.7 package.

For other temperature ranges see designation at the

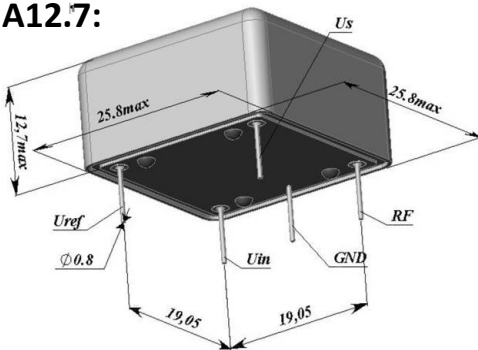
Availability of certain aging values for certain frequencies		Standard frequencies 10.0 MHz
G	$\pm 1 \times 10^{-7}$ /year	A
F	$\pm 5 \times 10^{-8}$ /year	A
E	$\pm 3 \times 10^{-8}$ /year	A
D	$\pm 2 \times 10^{-8}$ /year	A

Phase noise, dBc/Hz, for 10MHz, SIN	1	2	3	4
1 Hz	<-110	<-115	<-115	<-118...-120
10 Hz	<-140	<-135	<-140	<-140
100 Hz	<-158	<-158	<-158	<-158
1000 Hz	<-165	<-163	<-165	<-163
10000 Hz	<-170	<-165	<-170	<-165

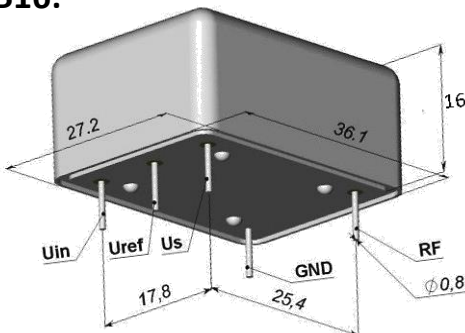
Phase noise, dBc/Hz, for 10MHz, HCMOS	1	2	3
1 Hz	<-110	<-115	<-118...-120
10 Hz	<-135	<-138	<-140
100 Hz	<-145	<-148	<-150
1000 Hz	<-155	<-155	<-155
10000 Hz	<-155	<-155	<-155

## Package drawing:

A12.7:



B16:



## 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	< $2 \times 10^{-12}$
Optional for phase noise options 2-4	< $8 \times 10^{-13}$
Optional for phase noise option 4 only	< $5 \times 10^{-13}$
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	< 5 min
Power supply (Us)	12V $\pm 5\%$
Steady state current consumption @ 25°C	< 130 mA
Peak current consumption during warm-up	< 430 mA
Frequency pulling range	> $\pm 3.0 \times 10^{-7}$
Control voltage range (Uin)	0...5 V
Reference voltage (Uref)	+5 V
Output	SIN HCMOS
Level	> 300 mV "1" >4.0 V "0" <0.5 V
Load	50 Ohm $\pm 5\%$ 10 kOhm/30pF
Harmonics	> 30 dBc -
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

