



# MV267

Oven Controlled Crystal Oscillator  
5 & 10 MHz

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

## Features

- Ultra Low Phase Noise
- High Stability vs. Temperature: up to  $\pm 5 \times 10^{-10}$
- Sinewave Output
- +12V

## Applications

- SatCom
- Test equipment
- Network clock
- Base station

## Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	$< \pm 3 \times 10^{-9}$	$< \pm 5 \times 10^{-10}$	
-10 to +60° C	$< \pm 3 \times 10^{-9}$	$< \pm 5 \times 10^{-10}$	
-20 to +70° C	$< \pm 3 \times 10^{-9}$	$< \pm 1 \times 10^{-9}$	Contact factory for $< \pm 5 \times 10^{-10}$
-40 to +70° C	$< \pm 3 \times 10^{-9}$	$< \pm 2 \times 10^{-9}$	Contact factory for $< \pm 1 \times 10^{-9}$
-40 to +85° C	$< \pm 3 \times 10^{-9}$	C	Contact factory for $< \pm 2 \times 10^{-9}$

Temperature ranges from -60° C to +85° C available. Contact factory and see ordering designations at the end of this data sheet.

Aging Options	Long Term Stability (Yearly Aging) Availability		Comments
	Standard Frequencies		
	5 MHz	10 MHz	
Option F	$< \pm 5 \times 10^{-8}$	$< \pm 5 \times 10^{-8}$	
Option E	$< \pm 3 \times 10^{-8}$	$< \pm 3 \times 10^{-8}$	
Option D	$< \pm 2 \times 10^{-8}$	$< \pm 2 \times 10^{-8}$	
Option C	C	C	Contact factory for $< \pm 1 \times 10^{-8}$

See ordering designations at the end of this data sheet.

Specification	Short Term, Pulling & Pushing Stability		Comments
	Standard	Option	
Short term stability per 1 sec.	$< \pm 2 \times 10^{-12}$	$< \pm 7 \times 10^{-13}$	Allan deviation
Stability vs. Load ( $\pm 5\%$ )	$< \pm 2 \times 10^{-10}$	-	
Stability vs. power supply ( $\pm 5\%$ )	$< \pm 2 \times 10^{-10}$	-	
Warm-up time to w/ in $< \pm 2 \times 10^{-8}$	<5 minutes	-	@25° C

## Specifications-Continued

Frequency Offset	Phase Noise, 12V, Sinewave (dBc/Hz)					
	5 MHz			10 MHz		
	-	LN	ULN	-	LN	ULN
1 Hz	< -110	< -115	< -118	< -102	< -107	< -112
10 Hz	< -140	< -145	< -148	< -130	< -134	< -138
100 Hz	< -150	< -153	< -155	< -135	< -140	< -145
1 kHz	< -158	< -160	< -160	< -145	< -145	< -150
10 kHz	< -160	< -161	< -161	< -145	< -145	< -150

See ordering designations at the end of this data sheet.

Output Parameters	
Output	Sinewave
Level	> 500 mV
Load	50 Ohms $\pm$ 5%
Rise/Fall Time	-
Harmonics	> -30 dBc

Contact factory for lower harmonics.

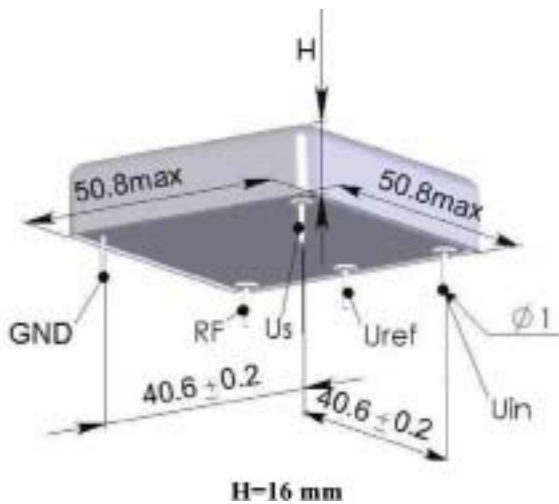
Power Supply & Voltage Control Parameters	
Specification	12V $\pm$ 5%
Steady state current @ 25 <sup>o</sup> C	< 250 mA
Peak warm-up current	< 550 mA
Frequency Adjust range	> $\pm$ 3x10 <sup>-7</sup>
Frequency Adjust Voltage (Uin)	0 to +5V
Reference Voltage (Uref)	+5V

See ordering designations at the end of this data sheet.

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-200 Hz
Vibration Acceleration	5 gs
Shock Acceleration	75 gs
Shock Duration	3 $\pm$ 1 mS
Humidity	-
Storage Temperature	-55 to +85 <sup>o</sup> C
RoHs	Option

Contact factory for extended environmental conditions.

## Outline Drawing



Pin	Value
Uref	Reference Voltage
Us	Power Supply
RF	RF Out
GND	Ground
Uin	Frequency Adjustment Voltage

## Ordering Guide

### MV267- C 1 F - 5.0 MHz - LN

Availability of certain stability vs. operating temperature range.		$\pm 3 \times 10^{-9}$	$\pm 2 \times 10^{-9}$	$\pm 1 \times 10^{-9}$	$\pm 5 \times 10^{-10}$
		3	2	1	05
A	0 to +55° C	A	A	A	A
B	-10 to +60° C	A	A	A	A
C	-20 to +70° C	A	A	A	C
D	-40 to +70° C	A	A	C	C
EX	-40 to +85° C	A	C	C	N

A=Available, C=Contact factory, N=Not available

Availability of certain aging values for certain frequencies.		Standard Frequencies	
		5.0 MHz	10 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	C	C

A=Available, C=Contact factory, NA=Not available

Phase Noise, 12V, Sinewave (dBc/Hz)						
Frequency Offset	5 MHz			10 MHz		
	-	LN	ULN	-	LN	ULN
1 Hz	< -110	< -115	< -118	< -102	< -107	< -112
10 Hz	< -140	< -145	< -148	< -130	< -134	< -138
100 Hz	< -150	< -153	< -155	< -135	< -140	< -145
1 kHz	< -158	< -160	< -160	< -145	< -145	< -150
10 kHz	< -160	< -161	< -161	< -145	< -145	< -150

Additional Notes:

- 1) Contact factory for daily aging values. General rule:  $x10^{-x}$  /year =  $x10^{-(x+2)}$  /day.
- 2) Advise RoHs requirement at Order.
- 3) Contact factory for non-standard temperature ranges.