



MV207

Oven Controlled Crystal Oscillator
5-20 MHz

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features

- Low G Sensitivity upto 0.5×10^{-9} /g
- Long Term Stability upto $\pm 2 \times 10^{-8}$ /year
- High Stability vs. Temperature: up to $\pm 7.5 \times 10^{-10}$
- Sinewave Output
- +5V & +12V

Applications

- SatCom
- Test equipment
- Network clock
- Base station

Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	$< \pm 5 \times 10^{-9}$	$< \pm 7.5 \times 10^{-10}$	
-10 to +60° C	$< \pm 5 \times 10^{-9}$	$< \pm 1 \times 10^{-9}$	Contact factory for $< \pm 7.5 \times 10^{-10}$
-20 to +70° C	$< \pm 5 \times 10^{-9}$	$< \pm 2 \times 10^{-9}$	Contact factory for $< \pm 1 \times 10^{-9}$
-40 to +70° C	$< \pm 5 \times 10^{-9}$	$< \pm 2 \times 10^{-9}$	Contact factory for $< \pm 1 \times 10^{-9}$
-40 to +85° C	$< \pm 5 \times 10^{-9}$	$< \pm 3 \times 10^{-9}$	Contact factory for $< \pm 2 \times 10^{-10}$

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

Standard Frequencies	Long Term Stability (Yearly Aging) Availability		Comments
	High	Higher	
5 MHz	$< \pm 1 \times 10^{-7}$	$< \pm 2 \times 10^{-8}$	
10.0 MHz	$< \pm 1 \times 10^{-7}$	$< \pm 2 \times 10^{-8}$	
12.8 MHz	$< \pm 1 \times 10^{-7}$	$< \pm 3 \times 10^{-8}$	Contact factory for $< \pm 2 \times 10^{-8}$
13.0 MHz	$< \pm 1 \times 10^{-7}$	$< \pm 5 \times 10^{-8}$	Contact factory for $< \pm 3 \times 10^{-8}$
16.384 MHz	$< \pm 2 \times 10^{-7}$	$< \pm 1 \times 10^{-7}$	Contact factory for $< \pm 5 \times 10^{-8}$
20.0 MHz	$< \pm 2 \times 10^{-7}$	C	Contact factory for $< \pm 1 \times 10^{-7}$

Contact factory for non-standard long term stability performance and see ordering designations at the end of this data sheet.

Specification	Short Term, Pulling & Pushing Stability			Comments
	Standard	Option	Option	
Short term stability per 1 sec.	$< \pm 5 \times 10^{-12}$	$< \pm 2 \times 10^{-12}$		Allan deviation, For 10 MHz
G-Sensitivity (5-500 Hz) /g	$< \pm 1.5 \times 10^{-9}$	$< \pm 1 \times 10^{-9}$	$< \pm 0.5 \times 10^{-9}$	
Stability vs. Load ($\pm 5\%$)	$< \pm 5 \times 10^{-10}$	-	-	
Stability vs. power supply ($\pm 5\%$)	$< \pm 5 \times 10^{-10}$	-	-	
Warm-up time to w/ in $< \pm 2 \times 10^{-8}$	<5 minutes	-	-	@25° C

Specifications-Continued

Phase Noise, 10 MHz, 12V, Sinewave (dBc/Hz)

Frequency Offset	STD	LN	Comments
1 Hz	< -95	< -100	Contact factory for lower phase noise
10 Hz	< -125	< -130	
100 Hz	< -145	< -153	
1 kHz	< -150	< -158	
10 kHz	< -155	< -160	

See ordering designations at the end of this data sheet.

Output Parameters

Output	Sinewave
Level	> 300 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%	5V \pm 5%
Steady state current @ 25 ^o C	< 150 mA	< 400 mA
Peak warm-up current @ -20 ^o C	< 400 mA	< 1000 mA
Frequency Adjust range (10 MHz)	> \pm 4x10 ⁻⁷	> \pm 4x10 ⁻⁷
Frequency Adjust Voltage (Uin)	0 to +5V	0 to +4.5V
Reference Voltage (Uref)	+5V	+4.5V

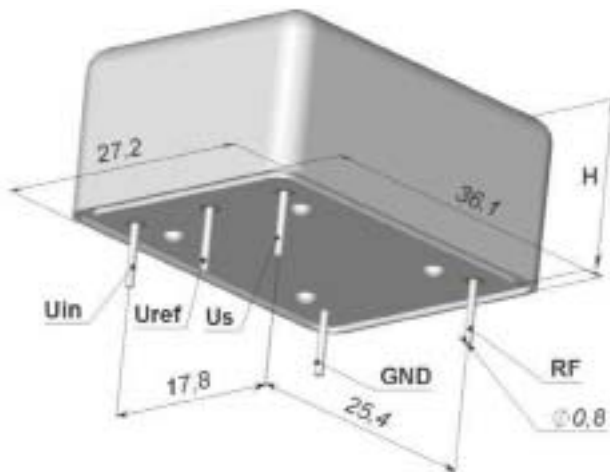
See ordering designations at the end of this data sheet.

Environmental Parameters

Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	5 gs
Shock Acceleration	75 gs
Shock Duration	3 \pm 1 mS
Humidity	98%
Storage Temperature	-55 to +85 ^o 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

For "H" definition please see package type

Ordering Guide

Package	Size
B16	36x27x16 mm
B12.7	36x27x12.7 mm

Power Supply
12V
5V

MV207- C 3 F -12V - B16 - LN - 10.0 MHz

Availability of certain stability vs. operating temperature range.		Standard Aging Values				
		$\pm 5 \times 10^{-9}$	$\pm 3 \times 10^{-9}$	$\pm 2 \times 10^{-9}$	$\pm 1 \times 10^{-9}$	$\pm 7.5 \times 10^{-10}$
A	0 to +55° C	A	A	A	A	A
B	-10 to +60° C	A	A	A	A	C
C	-20 to +70° C	A	A	A	C	N
D	-40 to +70° C	A	A	A	C	N
EX	-40 to +85° C	A	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	12.8 MHz	13.0 MHz	16.384 MHz	20.0 MHz
H	$\pm 2 \times 10^{-7}$ /year	N	N	N	N	A	A
G	$\pm 1 \times 10^{-7}$ /year	A	A	A	A	A	C
F	$\pm 5 \times 10^{-8}$ /year	A	A	A	A	C	N
E	$\pm 3 \times 10^{-8}$ /year	A	A	A	C	N	N
D	$\pm 2 \times 10^{-8}$ /year	A	A	C	N	N	N

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

Additional Notes:

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

Phase Noise (dBc/Hz)	10 MHz, Sinewave, 12V	-	LN
At Offset frequency	1 Hz	<-95	<-100
	10 Hz	<-125	<-130
	100 Hz	<-145	<-153
	1 kHz	<-150	<-158
	10 kHz	<-155	<-160