



MV272

Oven Controlled Crystal Oscillator 5 & 10 MHz

Revised 2/26/16

Your dedicated source for crystal oscillators and filters.

Features

- High Stability vs. Temperature: up to $\pm 1 \times 10^{-9}$
- Long Term Stability: up to $\pm 2 \times 10^{-8}$ /year
- Low G Sensitivity
- On/Off Function
- Low Phase Noise Option
- Sinewave Output
- +12V

Applications

- SatCom
- Test equipment
- Network clock
- Base station

Specifications

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

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

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

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	
Short term stability per 1 sec.	$< \pm 5 \times 10^{-12}$	$< \pm 2 \times 10^{-12}$ $< \pm 1 \times 10^{-12}$	Allan deviation for 10 MHz LN & ULN Options
Stability vs. Load ($\pm 5\%$)	$< \pm 5 \times 10^{-10}$	$< \pm 2 \times 10^{-10}$	
Stability vs. power supply ($\pm 5\%$)	$< \pm 5 \times 10^{-10}$	$< \pm 2 \times 10^{-10}$	
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	-	LN	ULN*	Comments
1 Hz	< -95	< -105	< -110	Contact factory for lower phase noise
10 Hz	< -125	< -135	< -140	
100 Hz	< -145	< -155	< -157	
1 kHz	< -155	< -160	< -161	
10 kHz	< -158	< -161	< -162	

*Measured values.

Output Parameters	
Output	Sinewave
Level	> 400 mV
Load	50 Ohms \pm 5%
Rise/Fall Time	-
Harmonic Suppression	> -30 dBc

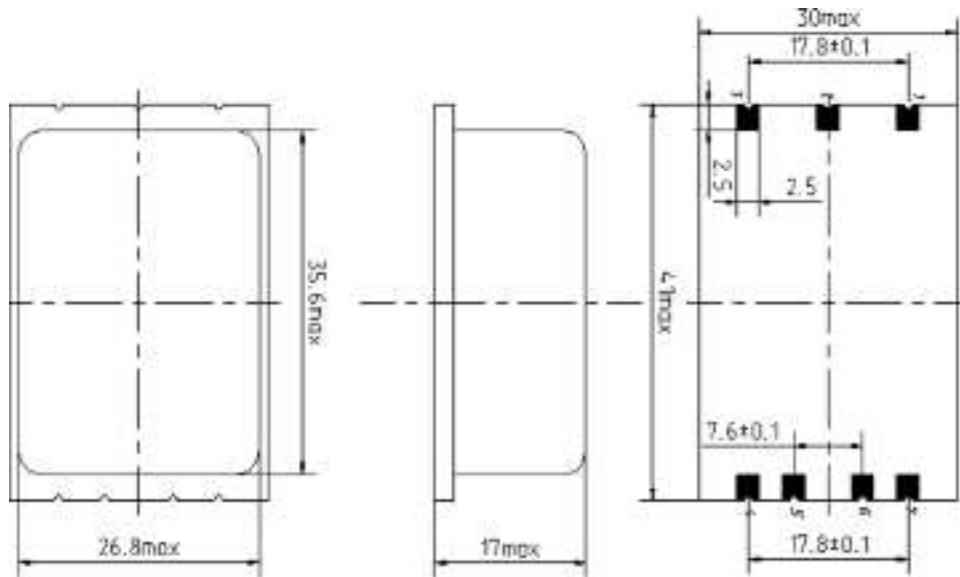
Power Supply & Voltage Control Parameters	
Supply Voltage	12V \pm 5%
Supply Voltage Option	10.6V to 12.6V
Steady state current @ 25 ^o C (10 MHz)	< 150 mA
Peak warm-up current @ >-20 ^o C	< 400 mA
Frequency Adjust range (10 MHz)	$\geq \pm 4 \times 10^{-7}$
Frequency Adjust Voltage (Uin)	0 to +5V
Reference Voltage (Uref)	+5V

See ordering designations at the end of this data sheet.

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Frequency Option	10-2000 Hz
Vibration Acceleration	10 g
Shock Acceleration	100 g
Shock Duration	3 \pm 1 mS
Humidity	98%
Storage Temperature	-40 to +85 ^o C
RoHs	Option

*Contact factory for extended environmental conditions.

Outline Drawing



Pin	Function
1	Ground
2	No Connection
3	RF Out
4	Power Supply
5	ON OFF
6	Control Voltage
7	Reference Voltage

Ordering Guide

G Sensitivity (0-500 Hz Range)		
-	1	2
Not Specified	$<1 \times 10^{-9} / g$	$<1.5 \times 10^{-9} / g$

MV272 - C 3 F - ULN - 10.0 MHz - 2

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 to +55° C	A	A	A	A
B	-10 to +60° C	A	A	A	A
C	-20 to +70° C	A	A	A	A
EX	-40 to +85° C	A	A	A	N

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

Availability of certain aging values for certain frequencies.		Standard Frequencies	
		5.0 MHz	10.0 MHz
F	$\pm 5 \times 10^{-8} / \text{year}$	A	A
E	$\pm 3 \times 10^{-8} / \text{year}$	A	A
D	$\pm 2 \times 10^{-8} / \text{year}$	A	C

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

Phase Noise (dBc/Hz), 10 MHz, Sinewave			
Offset	-	LN	ULN*
1 Hz	<-95	<-105	<-110
10 Hz	<-125	<-135	<-140
100 Hz	<-145	<-155	<-157
1 kHz	<-155	<-160	<-161
10 kHz	<-158	<-161	<-162
* Measured Values			

Additional Notes:

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