MV83M

Oven Controlled Crystal Oscillator
5 & 10 MHz

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features

- Excellent Short Term Stability (Allan deviation), upto $5x10^{-13}$ per 1 Sec.
- High Stability vs. Temperature: up to $\pm5x10^{-9}$
- Long Term Stability: up to $\pm3x10^{-8}$ /year
- Low Power Consumption
- Low Phase Noise
- Sinewave Output
- +12V

Applications

- SatCom
- Test equipment
- Network clock
- Base station

Specifications

Temperature Stability Availability			
Temperature Range	High	Higher	Comments
0 to $+55^0$ C	$<\pm5x10^{-8}$	$<\pm5x10^{-9}$	
-10 to $+60^0$ C	$<\pm5x10^{-8}$	$<\pm1x10^{-9}$	Contact factory for $<\pm7.5x10^{-9}$
-20 to $+70^0$ C	$<\pm5x10^{-8}$	$<\pm1x10^{-8}$	
-40 to $+70^0$ C	$<\pm5x10^{-8}$	$<\pm2x10^{-8}$	Contact factory for $<\pm1x10^{-8}$

Temperature ranges from -60^0 C to $+85^0$ C available. Comtact factory and see ordering designations at the end of this data sheet.

Long Term Stability (Yearly Aging) Availability		
Option		Comments
G	$<\pm1x10^{-7}$ /year	
F	$<\pm5x10^{-8}$ /year	
E	$<\pm3x10^{-8}$ /year	Contact factory for better stability

See ordering designations at the end of this data sheet.

Short Term, Pulling & Pushing Stability				
Specification	Standard	Stability Options		Comments
Short term stability per 1 sec.	-	3	$<\pm3x10^{-12}$	Allan deviation
	-	2	$<\pm2x10^{-12}$	
	-	1	$<\pm1x10^{-12}$	
	-	05	$<\pm5x10^{-13}$	
Stability vs. Load (±5%)	$<\pm1x10^{-9}$		-	
Stability vs. power supply (±5%)	$<\pm1x10^{-9}$		-	
Warm-up time to w/ in $<\pm5x10^{-8}$	<5 minutes		-	@25^0 C

Specifications-Continued

Phase Noise, 12V, Sinewave (dBc/Hz)				
Frequency Offset	5 MHz		10 MHz	Comments
	-	LN	-	
1 Hz	< -100	< -115	< -105	
10 Hz	< -135	< -140	< -135	
100 Hz	< -150	< -150	< -145	
1 kHz	< -155	< -155	< -150	
10 kHz	< -158	< -158	< -150	

See ordering designations at the end of this data sheet.

Output Parameters		
Output	Sinewave (5 MHz)	Sinewave (10 MHz)
Level	> 225 mV	> 225 mV
Load	50 Ohms ± 5%	50 Ohms ± 5%
Rise/Fall Time	-	-
Harmonics	> -30 dBc	> -30 dBc
Sub-Harmonics	-	> -35 dBc

See ordering designations at the end of this data sheet.

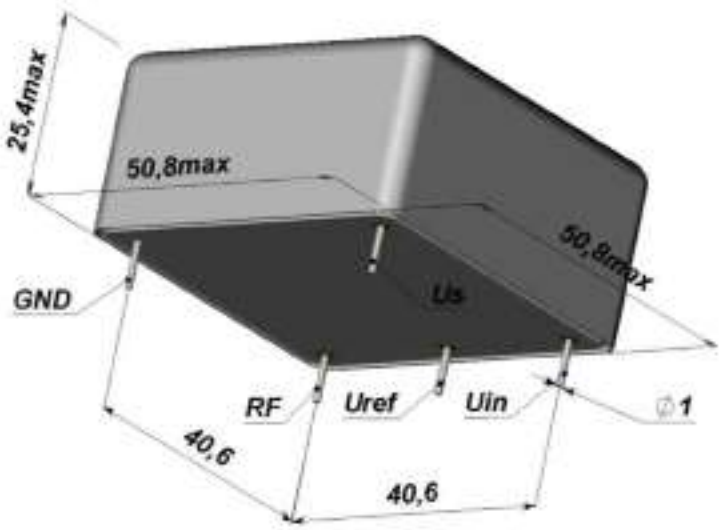
Power Supply & Voltage Control Parameters		
Supply Voltage		12V ±5%
Steady state current @ 25^0 C		< 55 mA
Peak warm-up current		< 400 mA
Frequency Adjust range (10 MHz)		>±3x10^{-7}
Frequency Adjust Voltage (Uin)		+1 to +8V
Slope		Positive
or with Potentiometer		20 kOhm
Reference Voltage (Uref)		+8.2V
Slope	Positive	

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	10 g
Shock Acceleration	-
Shock Duration	-
Humidity	98%
Storage Temperature	-55 to +85^0 C
RoHs	Option

Contact factory for extemded environmental conditions.

MV83M

Outline Drawing



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

Ordering Guide

Short Term Stability /1 Sec Allan deviation			
05	1	2	3
$<\pm5\times10^{-13}$	$<\pm1\times10^{-12}$	$<\pm2\times10^{-12}$	$<\pm2\times10^{-12}$

MV83M - C 10 F - 5.0MHz - 2 - LN

Availability of certain stability vs. operating temperature range.		$\pm5\times10^{-8}$	$\pm3\times10^{-8}$	$\pm2\times10^{-8}$	$\pm1\times10^{-8}$	$\pm7.5\times10^{-9}$	$\pm5\times10^{-9}$
		50	30	20	10	7	5
A	0 to +55^0 C	A	A	A	A	A	A
B	-10 to +60^0 C	A	A	A	A	C	C
C	-20 to +70^0 C	A	A	A	A	N	N
D	-40 to +70^0 C	A	A	A	C	N	N

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

Availability of certain aging values for certain frequencies.		Standard Frequency	
		5.0 MHz	10 MHz
G	$\pm1\times10^{-7}$ /year	A	A
F	$\pm5\times10^{-8}$ /year	A	A
E	$\pm3\times10^{-8}$ /year	A	A

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

Phase Noise (dBc/Hz), Sinewave			
Offset	5 MHz		10 MHz
	-	LN	-
1 Hz	<-100	<-115	<-105
10 Hz	<-135	<-140	<-135
100 Hz	<-150	<-150	<-145
1 kHz	<-155	<-155	<-150
10 kHz	<-158	<-158	<-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.