



MV136

Oven Controlled Crystal Oscillator
48-120 MHz

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features

- Small Package: 36x27x16.0 mm
- Low Phase Noise-Floor: <-165 dBc/Hz
- +5V & +12V
- Sinewave Output

Applications

- Frequency synthesizer
- PLL
- VSAT

Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	<±5x10 ⁻⁷	<±5x10 ⁻⁸	
-10 to +60° C	<±5x10 ⁻⁷	<±5x10 ⁻⁸	
-20 to +70° C	<±5x10 ⁻⁷	<±5x10 ⁻⁸	
-40 to +70° C	<±5x10 ⁻⁷	<±7.5x10 ⁻⁸	Contact factory for <±5x10 ⁻⁸
-55 to +70° C*	<±5x10 ⁻⁷	<±3x10 ⁻⁷	Contact factory for <±1x10 ⁻⁷
-55 to +85° C*	<±5x10 ⁻⁷	C	Contact factory for <±3x10 ⁻⁷

* Only for +12V. 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	
60 MHz	<±1x10 ⁻⁶	<±1x10 ⁻⁷	
80 MHz	<±1x10 ⁻⁶	<±1x10 ⁻⁷	
100 MHz	<±1x10 ⁻⁶	<±1x10 ⁻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
	60, 80 & 100 MHz		
Stability vs. Load (±5%)	<±5x10 ⁻⁸		
Stability vs. power supply (±5%)	<±1x10 ⁻⁷		
Warm-up time to w/ in <±1x10 ⁻⁶	<2 minutes		@25° C
Short term stability per 1 day.	-		Allan deviation

Specifications-Continued

Phase Noise, 100 MHz, 12V (dBc/Hz)
Sinewave

Frequency Offset	Option 1	Option 2	Option 3	Option 4	Option 5
10 Hz	-85	-90	-95	-98	-100
100 Hz	-115	-120	-125	-128	-130
10 kHz	-140	-145	-150	-150	-152
10 kHz	-160	-162	-165*	-165*	-165*

* -165 dBc/Hz for +5V only. see ordering designations at the end of this data sheet.

Output Parameters

Supply Voltage	5V \pm 10%	12V \pm 10%
Output	Sinewave	Sinewave
Level	> 400mV	> 400mV
Load	50 Ohms \pm 10%	50 Ohms \pm 10%
Rise/Fall Time	-	-
Harmonics	<-25 dB	<-25 dB

Contact factory for Rise/Fall time.

Power Supply & Voltage Control Parameters

Specification	5V \pm 10%	12V \pm 10%
Steady state current @ 25 ^o C	< 300 mA	< 150 mA
Peak warm-up current	< 950 mA	< 500 mA
Frequency Adjust range	> \pm 3x10 ⁻⁶	> \pm 3x10 ⁻⁶
Frequency Adjust Voltage (Uin)	0 to +4V	0 to +8V
Reference Voltage (Uref)	+4V	+8V

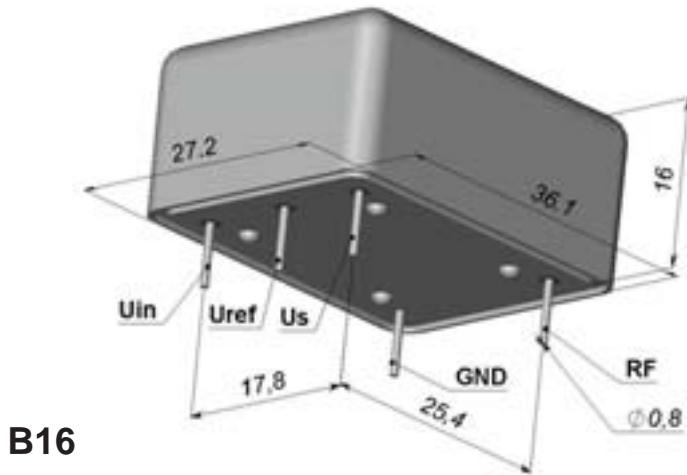
See ordering designations at the end of this data sheet.

Environmental Parameters

Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	5 g
Shock Acceleration	-
Shock Duration	-
Humidity	-
Storage Temperature	-55 to +80 ^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

M16 36x36x16 mm
Pin out to be advised

Ordering Guide

Power Supply	
5V	
12V	

Package	
B16	27x36x16 mm
M16*	36x36x16 mm

Frequency 48-120 MHz	
Standard Frequencies	
48, 56, 60, 80 & 100 MHz	

MV136 - B 300 - J - 5V - B16 - 3 - 100 MHz

Availability of certain stability vs. operating temperature range.		$\pm 5 \times 10^{-7}$	$\pm 3 \times 10^{-7}$	$\pm 1 \times 10^{-7}$	$\pm 7.5 \times 10^{-8}$	$\pm 5 \times 10^{-8}$
		500	300	100	75	50
A	0 to +55° C	A	A	A	A	A
B	-10 to +60° C	A	A	A	A	A
C	-20 to +70° C	A	A	A	A	A
D	-40 to +70° C	A	A	A	A	C
BT	-55 to +70° C*	A	A	C	C	N
BX	-55 to +85° C*	A	C	C	N	N

* Only for 12V

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

Phase Noise, 100 MHz, 12V (dBc/Hz)					
Offset	1	2	3	4	5
10 Hz	-85	-90	-95	-98	-100
100 Hz	-115	-120	-125	-128	-130
10 kHz	-140	-145	-150	-150	-152
10 kHz	-160	-162	-165*	-165*	-165*

* -165 dBc/Hz for +5V only.

Aging	
K	$\pm 1 \times 10^{-6}$ /year
J	$\pm 5 \times 10^{-6}$ /year
I	$\pm 3 \times 10^{-6}$ /year
H	$\pm 1 \times 10^{-6}$ /year
G	$\pm 1 \times 10^{-7}$ /year

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.