



# MV269

Oven Controlled Crystal Oscillator  
60-120 MHz

Revised 2/12/15

Your dedicated source for crystal oscillators and filters.

## Features

- Small Package Size: 21 x 13 x 9.5 mm (DIL 14)
- Low Phase Noise <math><-170\text{ dBc/Hz}</math> @ 100 kHz Offset
- HCMOS and Sinewave Output
- +3.3 and +5V

## Applications

- Frequency synthesizer
- Test equipment
- Network clock
- Base station

## Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	<math><\pm 5 \times 10^{-7}</math>	<math><\pm 5 \times 10^{-8}</math>	
-10 to +60° C	<math><\pm 5 \times 10^{-7}</math>	<math><\pm 7.5 \times 10^{-8}</math>	Contact factory for <math><\pm 5 \times 10^{-8}</math>
-20 to +70° C	<math><\pm 5 \times 10^{-7}</math>	<math><\pm 1 \times 10^{-7}</math>	Contact factory for <math><\pm 7.5 \times 10^{-8}</math>
-40 to +70° C	<math><\pm 5 \times 10^{-7}</math>	<math><\pm 3 \times 10^{-7}</math>	Contact factory for <math><\pm 1 \times 10^{-7}</math>
-40 to +85° C	<math><\pm 5 \times 10^{-7}</math>	C	Contact factory for <math><\pm 3 \times 10^{-7}</math>

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

## Long Term Stability (Yearly Aging) Availability

Aging Options	Comments
Option J	<math><\pm 5 \times 10^{-7}</math>
Option I	<math><\pm 3 \times 10^{-7}</math>
Option H	<math><\pm 2 \times 10^{-7}</math>
Option G	<math><\pm 1 \times 10^{-7}</math>

See ordering designations at the end of this data sheet.

## Short Term, Pulling & Pushing Stability

Specification	Standard	Option	Comments
Short term stability per 1 sec.	-	-	Allan deviation
Stability vs. Load	<math><\pm 2.0 \times 10^{-8}</math>	-	
Stability vs. power supply	<math><\pm 2.0 \times 10^{-8}</math>	-	
Warm-up time to w/ in <math><\pm 2 \times 10^{-7}</math>	<math><2\text{ minutes}</math>	-	@25° C

## Specifications-Continued

Option	Phase Noise, 80-100 MHz, (dBc/Hz)				
	1	2	3	4	5
Power Supply, V	3.3	3.3-5.0	5.0	5.0	5.0
10 Hz	< -80	< -85	< -90	< -92	< -95
100 Hz	< -115	< -120	< -125	< -127	< -127
1 kHz	< -140	< -145	< -150	< -152	< -153
10 kHz	< -150	< -155	< -162	< -165	< -167
100 kHz	< -160	< -163	< -165	< -168	< -170

See ordering designations at the end of this data sheet.

Output	Output Parameters		
	Logic	HCMOS 3.3V $\pm$ 0.2V	HCMOS 5.0V $\pm$ 0.2V
Power Supply, V			
Level	“1”	$\geq 2.5V$	$\geq 3.6V$
	“0”	$\leq 0.4V$	$\leq 0.4V$
Load		-	-
Rise/Fall Time		-	-
Harmonics		-	-

Contact factory for Rise/Fall time.

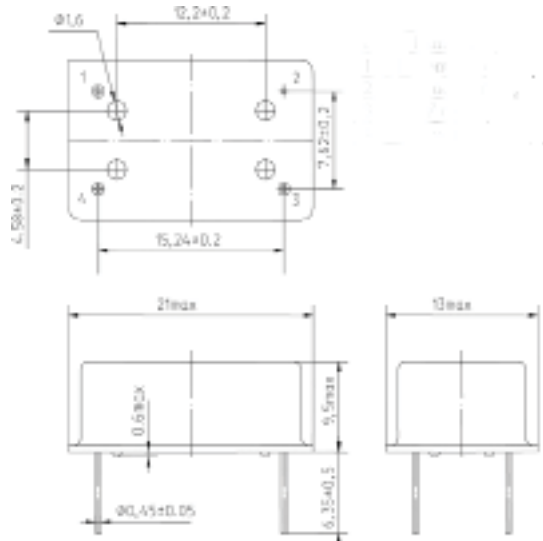
Specification	Power Supply & Voltage Control Parameters	
	3.3V $\pm$ 0.2V	5.0V $\pm$ 0.2V
Steady state current @ 25 <sup>o</sup> C	< 250 mA	< 180 mA
Peak warm-up current @ 25 <sup>o</sup> C	< 500 mA	< 500 mA
Frequency Adjust range	$> \pm 2 \times 10^{-6}$	$> \pm 2.5 \times 10^{-6}$
Frequency Adjust Voltage (Uin)	0 to +5V	0 to +5V
Reference Voltage (Uref)	-	-

See ordering designations at the end of this data sheet.

Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	5 g
Shock Acceleration	200 g
Shock Duration	-
Humidity	-
Storage Temperature	-55 to +85 <sup>o</sup> C
RoHs	Option

Contact factory for extended environmental conditions.

## Outline Drawing



Pin	Function
1	Control Voltage Input
2	Ground (case)
3	RF Output
4	Power Supply

## Ordering Guide

**MV269- B 100 J - 5V - 2 - SIN - 100M**

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	C
C	-20 to +70° C	A	A	A	C	N
D	-40 to +70° C	A	A	C	N	N
EX	-40 to +85° C	A	N	N	N	N

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

Voltage

12V

5V

Output

Sinewave

HCMOS

Availability of certain aging values for certain frequencies.

Aging

J	$\pm 5 \times 10^{-7}$ /year	A
I	$\pm 3 \times 10^{-7}$ /year	A
H	$\pm 2 \times 10^{-7}$ /year	A
G	$\pm 1 \times 10^{-7}$ /year	A

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

### Phase Noise, 80-100 MHz, (dBc/Hz)

Option	1	2	3	4	5
Power Supply, V	3.3	3.3-5.0	5.0	5.0	5.0
10 Hz	< -80	< -85	< -90	< -92	< -95
100 Hz	< -115	< -120	< -125	< -127	< -127
1 kHz	< -140	< -145	< -150	< -152	< -153
10 kHz	< -150	< -155	< -162	< -165	< -167
100 kHz	< -160	< -163	< -165	< -168	< -170

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.