



# MV317

Oven Controlled Crystal Oscillator  
100 MHz

Revised 11/12/18

Your dedicated source for crystal oscillators and filters.

## Features

- Low Phase Noise:  $<-140$  dBc/Hz @ 10 KHz  $<-180$  dBc/Hz @ 100 kHz
- Low G-sensitivity:  $<1E-9/G$  (typ), Option to  $<2E-10/G$
- Standard frequencies: 60, 80, 100, 120 & 122.76 MHz
- High Stability vs. Temperature: up to  $\pm 5 \times 10^{-8}$
- Small package: 25x25x10.3 mm
- Sinewave Output
- Power Supply: 5V or 12V

## Applications

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

## Specifications

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

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	$<\pm 5 \times 10^{-7}$
Option I	$<\pm 3 \times 10^{-7}$
Option H	$<\pm 2 \times 10^{-7}$
Option G	$<\pm 1 \times 10^{-7}$

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	$<\pm 2.0 \times 10^{-8}$	-	
Stability vs. power supply ( $\pm 10\%$ )	$<\pm 5.0 \times 10^{-8}$	-	
Warm-up time to w/ in $<\pm 2 \times 10^{-7}$	<2 minutes	-	@25° C

## Specifications-Continued

### Phase Noise, 100 MHz, Sinewave (dBc/Hz)

Offset	Option	12 V						5 V			
		2	3	4	5	6	7	2	3	4	5
10 Hz		<-95	<-98	<-100	<-102	<-98	<-107	<-95	<-98	<-100	<-102
100 Hz		<-127	<-132	<-135	<-137	<-132	<-140	<-127	<-132	<-133	<-135
1 kHz		<-156	<-157	<-160	<-164	<-162	<-165	<-156	<-157	<-160	<-164
10 kHz		<-172	<-174	<-170	<-176	<-176	<-176	<-172	<-172	<-172	<-174
100 kHz		<-176	<-177	<-176	<-178	<-180	<-178	<-174	<-174	<-175	<-176

See ordering designations.

### Output Parameters

Output	12 V	5 V
Level	>500 mV	>400 mV
Load	50 Ohms ±10%	
Rise/Fall Time	-	-
Harmonics	-25 dBc	

See ordering designations at the end of this data sheet.

### Power Supply & Voltage Control Parameters

Specification	12V ±10%	5V ±10%
Steady state current @ 25° C	< 120 mA	< 250 mA
Peak warm-up current @ 25° C	< 300 mA	< 600 mA
Frequency Adjust range	>±2.0x10 <sup>-6</sup>	>±2.0x10 <sup>-6</sup>
Frequency Adjust Voltage (Uin)	0 to +10V	0 to +4.5V
Reference Voltage (Uref)	10...11V	4.5...4.8V

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	-
Shock Duration	-
Humidity	-
Storage Temperature	-55 to +80° C
RoHs	Option

G-Sensitivity Options (Contact factory or enter into RFQ)

< 8E-10/G

< 5E-10/G

< 3E-10/G

< 2-10E/G

