MV317

Oven Controlled Crystal Oscillator
48-125 MHz

Revised 4/11/15

Your dedicated source for crystal oscillators and filters.

Features
- Small Package Size: 25 x 25 x10.3 mm
- Low Phase Noise <-177 dBc/Hz @ 100 kHz Offset
- High Stability vs. Temperature: up to ±5x10^{-8}
- Short Warm-up Time: less than 2 minutes
- Sinewave Output
- 12V

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

Specifications

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

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		
Aging Options		Comments
Option J	<±5x10^{-7}	
Option I	<±3x10^{-7}	
Option H	<±2x10^{-7}	
Option G	<±1x10^{-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	<±2.0x10^{-8}	-	
Stability vs. power supply (±10%)	<±5.0x10^{-8}	-	
Warm-up time to w/ in <±2x10^{-7}	<2 minutes	-	@25^0 C

Specifications-Continued

Phase Noise, 100 MHz, Sinewave (dBc/Hz)					
Option	1	2	3	4	5
10 Hz	< -95	< -97	< -97	< -100	< -100
100 Hz	< -126	< -128	< -128	< -135	< -135
1 kHz	< -152	< -154	< -156	< -160	< -162
10 kHz	< -170	< -172	< -174	< -170	< -176
100 kHz	< -174	< -176	< -177	< -173	< -177

See ordering designations and noise plots at the end of this data sheet.

Output Parameters	
Output	Sinewave
Level	>600 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%
Steady state current @ 25^0 C	< 150 mA
Peak warm-up current @ 25^0 C	< 370 mA
Frequency Adjust range	$>\pm 2.0 \times 10^{-6}$
Frequency Adjust Voltage (Uin)	0 to +9V
Reference Voltage (Uref)	9V ±0.5V

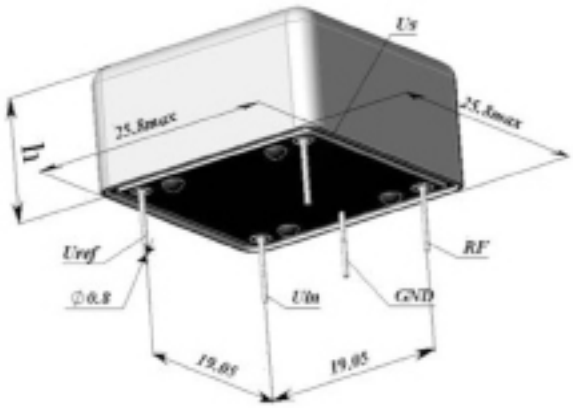
See ordering designations at the end of this data sheet.

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	5 gs
Shock Acceleration	-
Shock Duration	-
Humidity	-
Storage Temperature	-55 to $+80^0$ C
RoHs	Option

Contact factory for extemded environmental conditions.

MV317

Outline Drawing



h= 10.3 mm

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

Ordering Guide

MV317- B 300 J - 3 - 100M

Frequency Range: 48.0 to 125.0 MHz

Standard Frequency: 50.0; 84.0; 98.304; 100.0 MHz

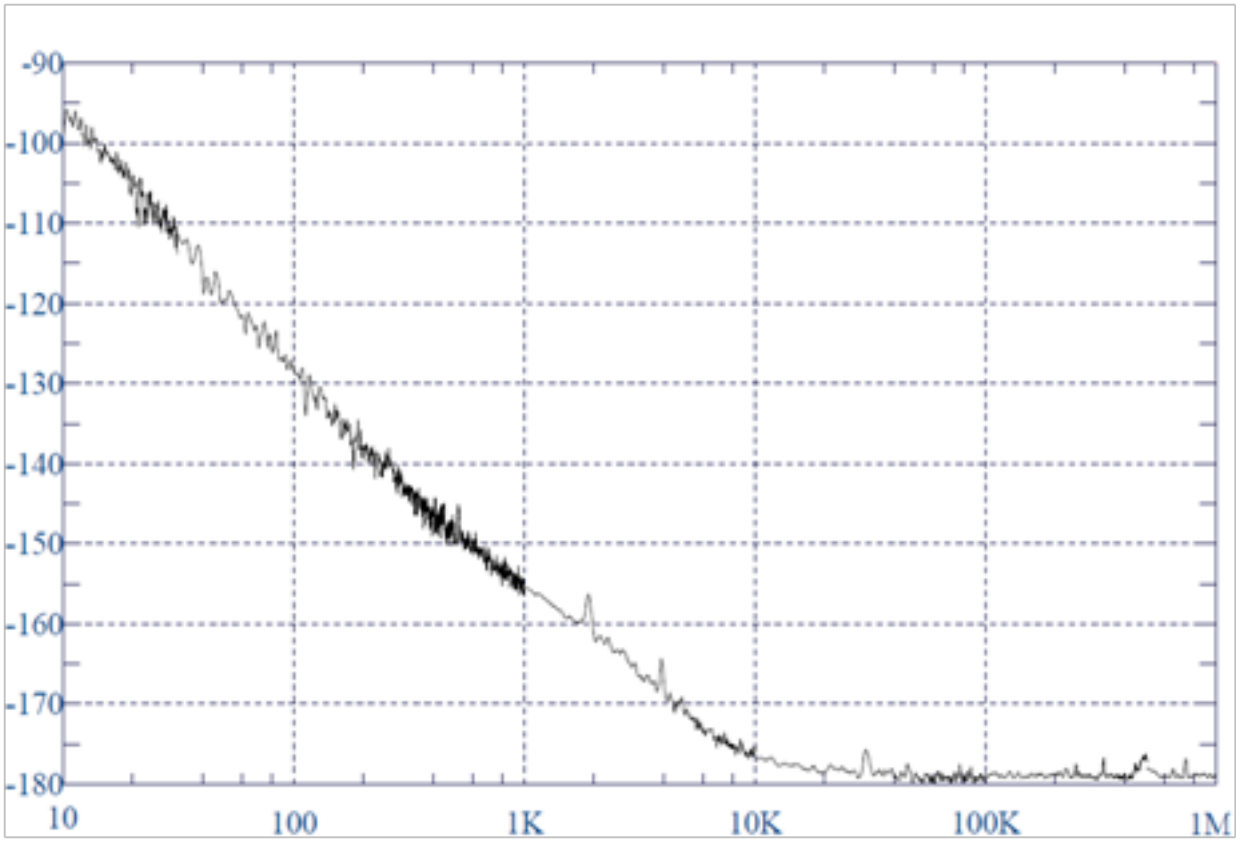
Availability of certain stability vs. operating temperature range.		±5x10^{-7}	±3x10^{-7}	±1x10^{-7}	±7.5x10^{-8}	±5x10^{-8}
		500	300	100	75	50
A	0 to +55^0 C	A	A	A	A	A
B	-10 to +60^0 C	A	A	A	A	C
C	-20 to +70^0 C	A	A	A	C	N
D	-40 to +70^0 C	A	A	C	N	N
EX	-40 to +85^0 C	A	C	C	N	N

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

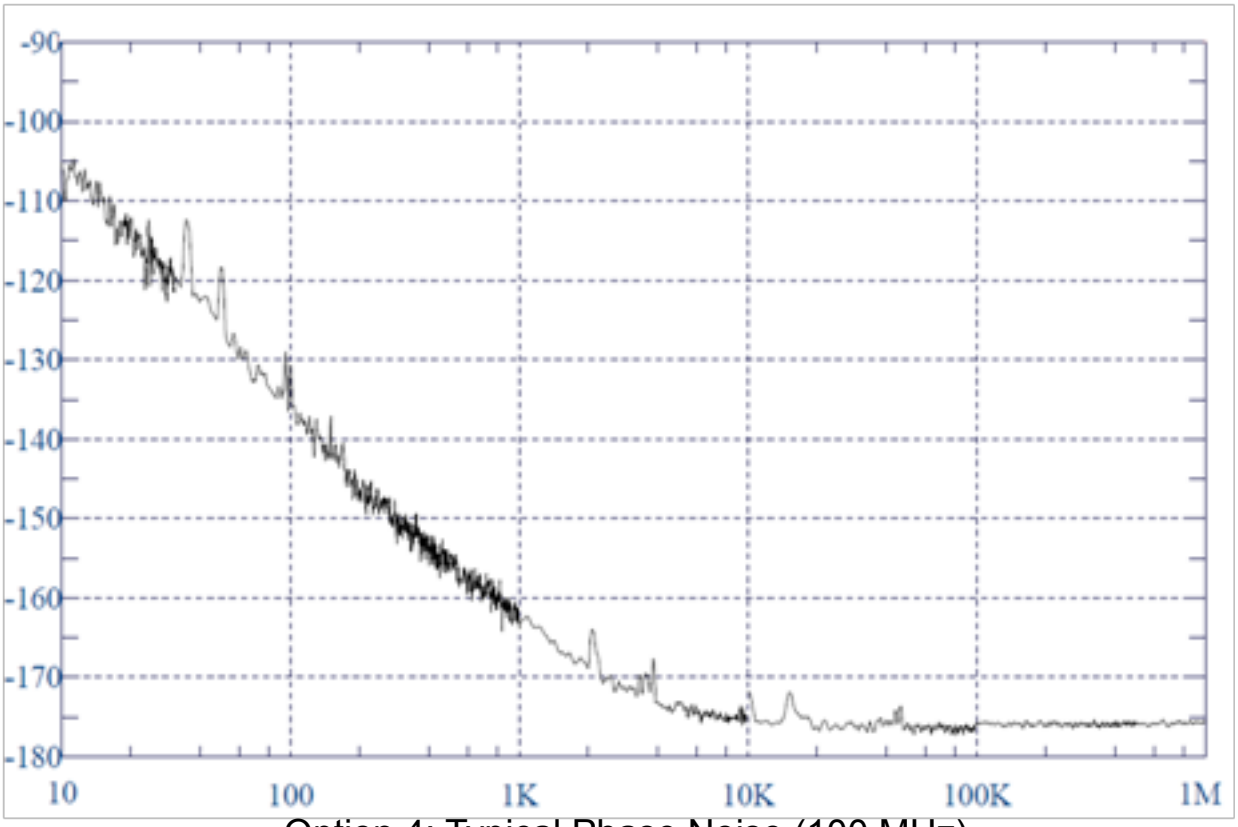
Aging	
J	±5x10^{-7} /year
I	±3x10^{-7} /year
H	±2x10^{-7} /year
G	±1x10^{-7} /year

Phase Noise, 100 MHz, Sinewave (dBc/Hz)					
Option	1	2	3	4	5
10 Hz	< -95	< -97	< -97	< -100	< -100
100 Hz	< -126	< -128	< -128	< -135	< -135
1 kHz	< -152	< -154	< -156	< -160	< -162
10 kHz	< -170	< -172	< -174	< -170	< -176
100 kHz	< -174	< -176	< -177	< -173	< -177
See noise plot on next page.					

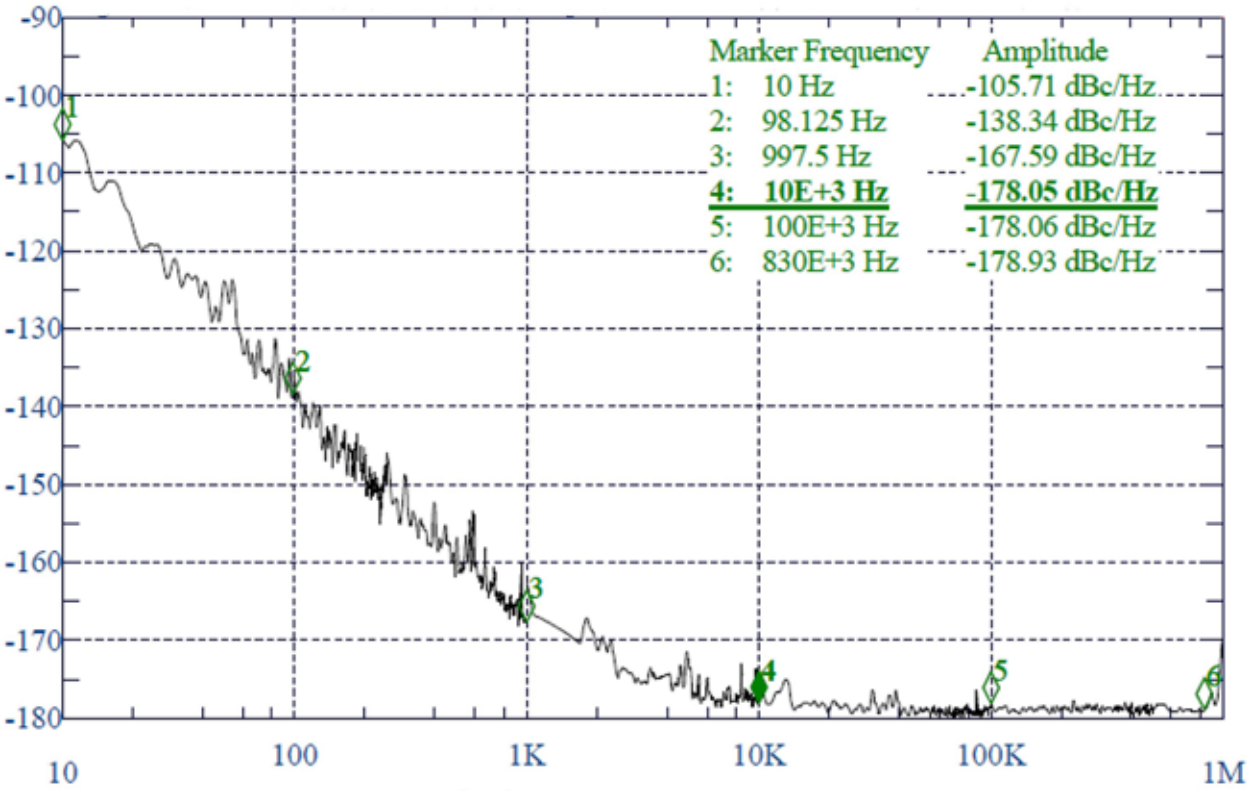
Additional Notes:
1) Contact factory for daily aging values. General rule: x10^{-x} /year = x10$^{-(x+2)}$ /day.
2) Advise RoHs requirement at Order.
3) Contact factory for non-standard temperature ranges.



Option 3: Typical Phase Noise (100 MHz)



Option 4: Typical Phase Noise (100 MHz)



Option 5: Typical Phase Noise (100 MHz)