



MV120

Temperature Compensated
Crystal Oscillator (TCXO)

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features

- **Frequency Range 9.6-20.0 MHz**
- High Stability vs. Temperature upto $<\pm 7 \times 10^{-7}$
- Wide Operating Temperature Range
- +12V

Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	$<\pm 2 \times 10^{-6}$	$<\pm 7 \times 10^{-7}$	
-10 to +60° C	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	Contact factory for $<\pm 7 \times 10^{-7}$
-20 to +70° C	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	
-40 to +70° C	$<\pm 2 \times 10^{-6}$	$<\pm 1.5 \times 10^{-6}$	Contact factory for $<\pm 1 \times 10^{-7}$

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	
9.8304 MHz	$<\pm 3 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	
10.0 MHz	$<\pm 3 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	
12.8 MHz	$<\pm 3 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	

Contact factory for non-standard long term stability performance and see ordering designations at the end of this data sheet.

Short Term Stability, Power Supply, Pulling & Pushing Parameters		
Specification	12V (+5%, -30%)	Comments
Short Term Stability per 1 Second	$<1 \times 10^{-9}$	Allan Deviation
Start-Up Time	<1 Sec	
Current consumption @ 25° C	< 5 mA	
Frequency Adjust range (10 MHz)	$<\pm 8.5 \times 10^{-6}$	
Stability vs. Load	$<\pm 3 \times 10^{-7}$	
Stability vs. power supply	$<\pm 2 \times 10^{-7}$	

See ordering designations at the end of this data sheet.

Specifications-Continued

Phase Noise (dBc/Hz)		
	-	LN*
Frequency Offset		
1 Hz	-60	-65
10 Hz	-90	-95
100 Hz	-120	-120
1 kHz	-140	-140

* For 9.6-12.8 MHz. Contact factory for lower phase noise performance and see ordering designations at the end of this data sheet.

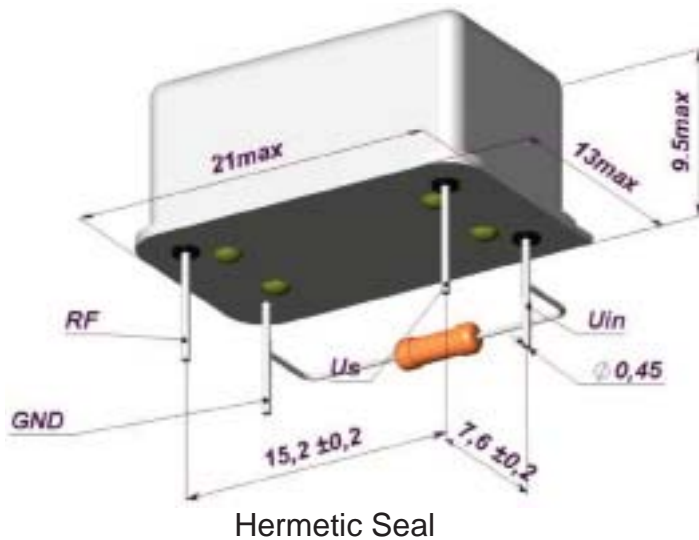
Output Parameters	
Output	Sinewave
Level	200-350 mV
Load	500 Ohms \pm 10%
Rise/Fall Time	-
Harmonics	>-30 dBc

Contact factory for improved harmonics.

Environmental Parameters	
Specification	Conditions
Vibration Frequency	1-500 Hz
Vibration Acceleration	10 g
Shock Acceleration	500 g
Shock Duration	2 mS
Humidity	98%
Storage Temperature	-50 to +70° C
RoHs	Option

Contact factory for extended environmental conditions.

Outline Drawing



Pin	Value
Us	Power Supply
RF	RF Out
GND	Ground
Uin	Frequency Adjustment Voltage
NC	No Connection

Pins Uin and GND are connected by technological resistor to adjust the frequency. This resistor can be removed in time of installation of the oscillator to an electronic device providing the same resistance between the pins Uin and GND.

Ordering Guide

MV120 - **B** - **1500** - **K** - **LN** - **10 MHz**

Availability of certain stability vs. operating temperature range.

		$\pm 2 \times 10^{-6}$	$\pm 1.5 \times 10^{-6}$	$\pm 1 \times 10^{-6}$	$\pm 7.0 \times 10^{-7}$
		2000	1500	1000	700
A	0 to +55° C	A	A	A	A
B	-10 to +60° C	A	A	A	C
C	-20 to +70° C	A	A	A	N
D	-40 to +70° C	A	A	C	N

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

Availability of certain aging values for certain frequencies.

		Standard Frequencies		
		9.8304 MHz	10.0 MHz	12.8 MHz
M	$\pm 2 \times 10^{-6}$ /year	A	A	A
L	$\pm 2 \times 10^{-6}$ /year	A	A	A
K	$\pm 1 \times 10^{-6}$ /year	A	A	A

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

Phase Noise (dBc/Hz)

	-	LN*
1 Hz	-60	-65
10 Hz	-90	-95
100 Hz	-120	-120
1 kHz	-140	-140

* For frequencies 9.6-12.8 MHz

Additional Notes:

- 1) Advise RoHs requirement at Order.
- 2) Temperature ranges of -60° C to +85° C available. Contact factory for non-standard temperature ranges.