



MV121

Temperature Compensated Crystal Oscillator (TCXO)

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features

- **Frequency Range 9.8-20.0 MHz**
- High Stability vs. Temperature upto $<\pm 5 \times 10^{-7}$
- Small size 20x20x10 mm
- +5V & +12V

Specifications

Temperature Range	Temperature Stability Availability		Comments
	High	Higher	
0 to +55° C	$<\pm 2 \times 10^{-6}$	$<\pm 5 \times 10^{-7}$	
-10 to +60° C	$<\pm 2 \times 10^{-6}$	$<\pm 8 \times 10^{-7}$	
-20 to +70° C	$<\pm 2 \times 10^{-6}$	$<\pm 1.5 \times 10^{-6}$	
-40 to +70° C	$<\pm 2 \times 10^{-6}$	C	Contact factory

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	
10.0 MHz	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	
20.0 MHz	$<\pm 2 \times 10^{-6}$	C	Contact factory

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

Specification	Short Term Stability, Power Supply, Pulling & Pushing Parameters		Comments
	5V	12V	
Short Term Stability per 1 Second	$<1 \times 10^{-9}$	$<1 \times 10^{-9}$	Allan Deviation
Current consumption @ 25° C	< 15 mA	< 6 mA	
Frequency Adjust range (10 MHz)	$<\pm 8.5 \times 10^{-6}$	$<\pm 8.5 \times 10^{-6}$	
Stability vs. Load	$<\pm 2 \times 10^{-7}$	$<\pm 2 \times 10^{-7}$	
Stability vs. power supply	$<\pm 3 \times 10^{-7}$	$<\pm 3 \times 10^{-7}$	

See ordering designations at the end of this data sheet.

Specifications-Continued

Phase Noise (dBc/Hz)

10-12.8 MHz

13-20 MHz

Frequency Offset

1 Hz	-65	-
10 Hz	-95	-
100 Hz	-125	-115
1 kHz	-145	-140
10 kHz	-155	-145

Contact factory for lower phase noise performance and see ordering designations at the end of this data sheet.

Output Parameters

Supply

5V

12V

Level	300-500 mV	500-800 mA
Load	<2K Ohms ±10%	<2K Ohms ±10%
Rise/Fall Time	-	-
Harmonics	>-30 dBc	>-30 dBc

Contact factory for improved harmonics.

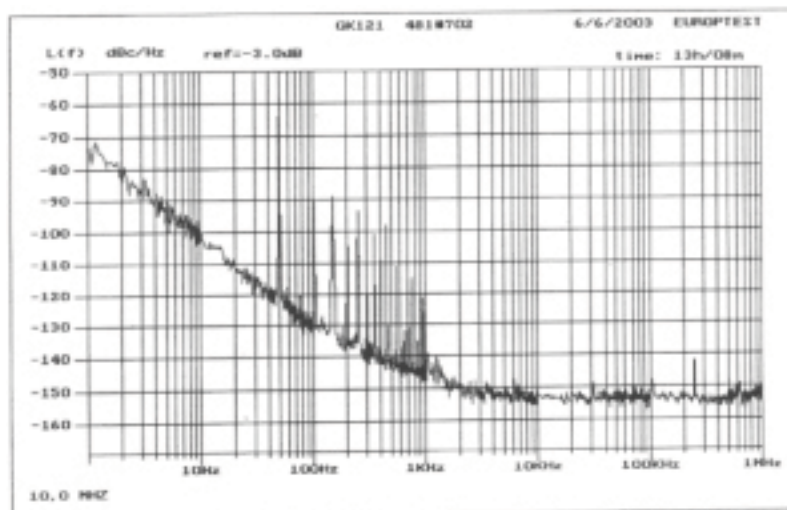
Environmental Parameters

Specification

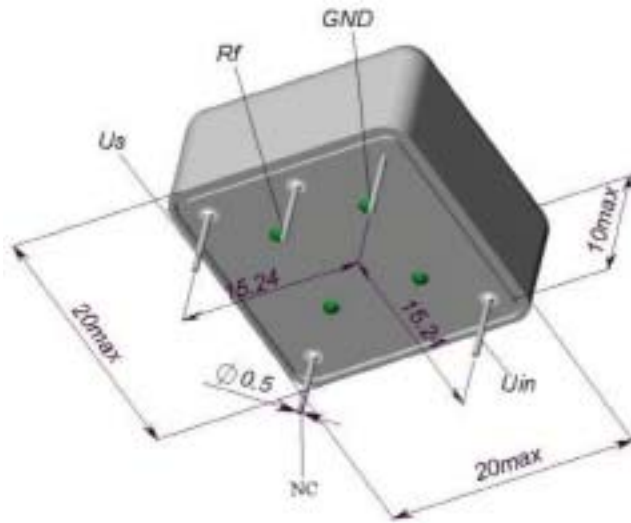
Conditions

Vibration Frequency	1-500 Hz
Vibration Acceleration	10 g
Shock Acceleration	500 g
Shock Duration	2 mS
Humidity	-
Storage Temperature	-
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

Ordering Guide

MV121 - C - 2000 - L - 5V - 10 MHz

Power Supply
5V
12V

Availability of certain stability vs. operating temperature range.		$\pm 2 \times 10^{-6}$	$\pm 1.5 \times 10^{-6}$	$\pm 8 \times 10^{-7}$	$\pm 5 \times 10^{-7}$
		2000	1500	800	500
A	0 to +55° C	A	A	A	A
B	-10 to +60° C	A	A	A	N
C	-20 to +70° C	A	A	N	N
D	-40 to +70° C	A	N	N	N

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

Availability of certain aging values for certain frequencies.		Standard Frequencies	
		10.0 MHz	20.0 MHz
L	$\pm 2 \times 10^{-6}$ /year	A	A
K	$\pm 1 \times 10^{-6}$ /year	A	N

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

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.