MV118

Oven Controlled Crystal Oscillator
10-25.0 MHz

Revised 1/1/15

Your dedicated source for crystal oscillators and filters.

Features
- Small Package: 20x20x10.0 mm
- High Stability vs. Temperature: up to ±1x10^{-8}
- +3.3V & +5V
- HCMOS Output

Applications
- SatCom
- Test equipment
- Network clock
- Base station

Specifications

Temperature Stability Availability			
Temperature Range	High	Higher	Comments
0 to +55^0 C	<±1x10^{-7}	<±2x10^{-8}	Contact factory for <±1x10^{-8}
-10 to +60^0 C	<±1x10^{-7}	<±2x10^{-8}	Contact factory for <±1x10^{-8}
-20 to +70^0 C	<±1x10^{-7}	<±2x10^{-8}	
-40 to +70^0 C	<±1x10^{-7}	<±5x10^{-8}	Contact factory for <±2x10^{-8}
-40 to +85^0 C	<±1x10^{-7}	C	Contact factory for <±5x10^{-8}

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			
Standard Frequencies	High	Higher	Comments
10 MHz	<±2x10^{-7}	<±3x10^{-8}	
12.8 MHz	<±2x10^{-7}	<±5x10^{-8}	Contact factory for <±3x10^{-8}
13.0 MHz	<±2x10^{-7}	<±5x10^{-8}	Contact factory for <±3x10^{-8}
16.384 MHz	<±2x10^{-7}	<±1x10^{-7}	Contact factory for <±5x10^{-8}
20 MHz	<±2x10^{-7}	C	Contact factory for <±1x10^{-7}

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

Short Term, Pulling & Pushing Stability			
Specification	10-13 MHz	13-25 MHz	Comments
Stability vs. Load (±5%)	<±5x10^{-9}		
Stability vs. power supply (±5%)	<±5x10^{-9}		
Warm-up time to w/ in <±1x10^{-7}	<3 minutes		@25^0 C
Short term stability per 1 sec.	<1x10^{-11}	<-2x10^{-11}	Allan deviation

Specifications-Continued

Phase Noise (dBc/Hz) HCMOS		
Freuency Offset	10-13 MHz	>13-20 MHz
1 Hz	-90	-75
10 Hz	-120	-105
100 Hz	-140	-125
1 kHz	-145	-135
10 kHz	-150	-145

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

Output Parameters			
Suppy Voltage		5V ±5%	3.3V ±5%
Level	"0"	< 0.5V	> 0.3V
	"1"	> 4.5V	> 3.0V
Load		10K Ohms, 15 pF	10K Ohms, 15 pF
Rise/Fall Time		-	-
Harmonics		-	

Comtact factory for Rise/Fall time and Harmonics.

Power Supply & Voltage Control Parameters		
Specification	5V ±5%	3.3V ±5%
Steady state current @ 25^0 C	< 150 mA	< 250 mA
Peak warm-up current	< 450 mA	< 700 mA
Frequency Adjust range (10 MHz)	$>\pm5x10^{-7}$	$>\pm5x10^{-7}$
Frequency Adjust Voltage (Uin)	0 to +4.5V	0 to +3.0V
or with Potentiometer	20 kOhm	20 kOhm
Adjustment Slope	Positive	Positive
Reference Voltage (Uref)	+4.5V	+3.0V

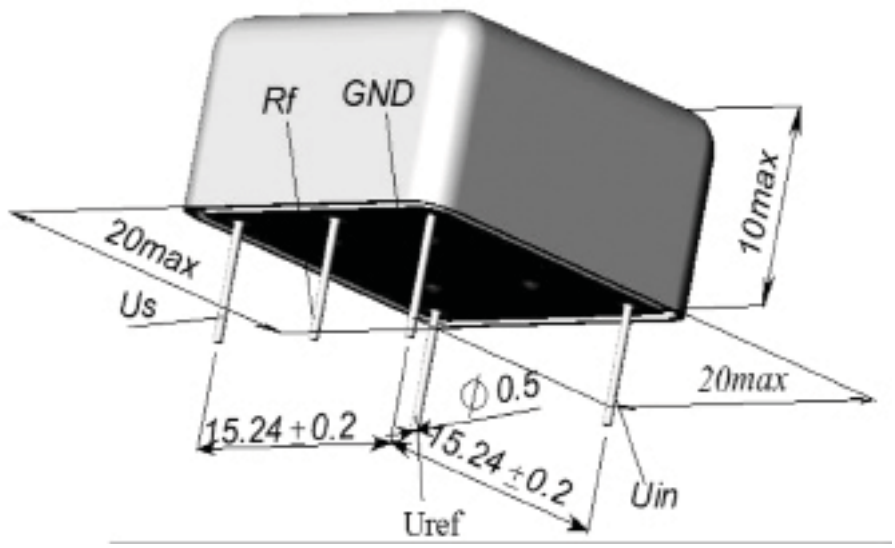
See ordering designations at the end of this data sheet.

Environmental Parameters	
Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	10 gs
Shock Acceleration	75 gs
Shock Duration	3±1 mS
Humidity	-
Storage Temperature	-55 to $+85^0$ C
RoHs	Option

Contact factory for extemded environmental conditions.

MV118

Outline Drawing



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

Ordering Guide

Power Supply
5V
3.5V

MV118 - B 20 G - 3.3V - 10.0 MHz

Availability of certain stability vs. operating temperature range.		±1x10^{-7}	±5x10^{-8}	±2x10^{-8}	±1x10^{-8}
		100	50	20	10
A	0 to +55^0 C	A	A	A	C
B	-10 to +60^0 C	A	A	A	C
C	-20 to +70^0 C	A	A	A	N
D	-40 to +70^0 C	A	A	C	N
EX	-40 to +85^0 C	A	C	N	N

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

Availability of certain aging values for certain frequencies.		Standard Frequencies				
		10.0 MHz	12.8 MHz	13.0 MHz	16.384 MHz	20.0 MHz
H	±2x10^{-7} /year	A	A	A	A	A
G	±1x10^{-7} /year	A	A	A	A	C
F	±5x10^{-8} /year	A	A	A	C	N
E	±3x10^{-8} /year	A	C	C	N	N

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

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.