



Your dedicated source for crystal oscillators and filters.

Features

- **Frequency Range 9.6-20.0 MHz**
- Excellent Stability vs. Temperature
- Wide Operating Temperature Range
- +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	$<\pm 2 \times 10^{-6}$	$<\pm 5 \times 10^{-7} *$	
-20 to +70° C	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	Contact factory for $<\pm 5 \times 10^{-7}$
-40 to +70° C	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6} *$	Contact factory for $<\pm 5 \times 10^{-7}$

* For 10 MHz. 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	$<\pm 2 \times 10^{-6}$	$<\pm 1 \times 10^{-6}$	
12.8 MHz	$<\pm 2 \times 10^{-6}$	C	Contact factory for $<\pm 1 \times 10^{-6}$
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.

Power Supply, Pulling & Pushing Parameters

Specification	12V $\pm 25\%$	
	Sinewave	HCMOS
Current consumption @ 25° C	< 4 mA	< 7 mA
Frequency Adjust range (10 MHz)	$<\pm 3.5 \times 10^{-6}$	$<\pm 3.5 \times 10^{-6}$
Stability vs. Load	$<\pm 2 \times 10^{-7}$	$<\pm 2 \times 10^{-7}$
Stability vs. power supply	$<\pm 2 \times 10^{-7}$	$<\pm 2 \times 10^{-7}$

See ordering designations at the end of this data sheet.

Specifications-Continued

Phase Noise, +12V, 10 MHz (dBc/Hz)

	Sinewave	HCMOS
Frequency Offset		
1 Hz	-60	-55
10 Hz	-90	-85
100 Hz	-115	-110
1 kHz	-135	-125
10 kHz	-140	-130

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

Output Parameters

Output	Sinewave	HCMOS	
Level	325±100 mV	"0"	< 0.4V
		"1"	> 4.0V
Load	50 Ohms		-
Rise/Fall Time	-		-
Harmonics	-		-

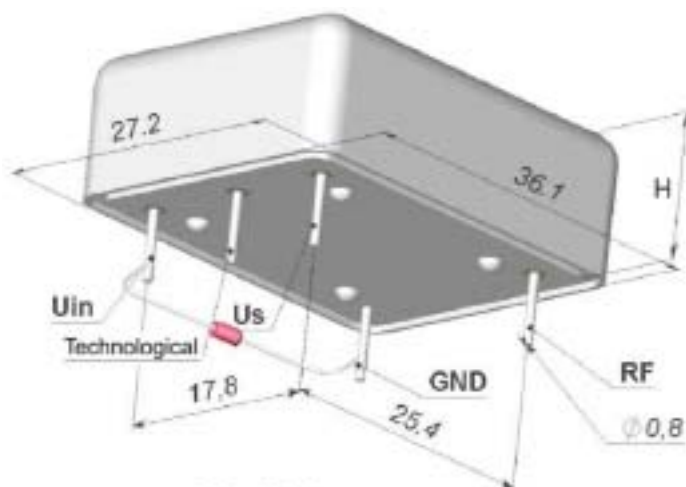
Contact factory for Rise/Fall time and Harmonics.

Environmental Parameters

Specification	Conditions
Vibration Frequency	10-500 Hz
Vibration Acceleration	10 g
Shock Acceleration	100 g
Shock Duration	3±1 mS
Humidity	-
Storage Temperature	-50 to +70° C
RoHs	Option

Contact factory for extended environmental conditions.

Outline Drawing



H=10.1 mm

* for 20 MHz package height is 8.2 mm max

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

Pins Uin and GND are connected by technological resistor (18±6 kOhm) 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

MV88 - B - 1000 - K - HCMOS - 10 MHz

Output
Sinewave
HCMOS

Availability of certain stability vs. operating temperature range.		±2x10 ⁻⁶	±1x10 ⁻⁶	±5x10 ⁻⁷
		2000	1000	500
A	0 to +55 ⁰ C	A	A	A*
B	-10 to +60 ⁰ C	A	A	A*
C	-20 to +70 ⁰ C	A	A	A
D	-40 to +70 ⁰ C	A	A*	C

* For 10 MHz
A=Available, C=Contact factory, N=Not available

Availability of certain aging values for certain frequencies.		Standard Frequencies		
		10.0 MHz	12.8 MHz	20.0 MHz
L	±2x10 ⁻⁶ /year	A	A	A
K	±1x10 ⁻⁶ /year	A	C	N

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

Additional Notes:

- 1) Advise RoHs requirement at Order.
- 2) Temperature ranges of -60⁰ C to +85⁰ C available. Contact factory for non-standard temperature ranges.