

MV-XH163-3225G is a Crystal Oscillator (XO) . This XO provides low jitter performance, HCSL output and comes in a Hermetic Ceramic 3.2x2.5mm package. This device contains an internal voltage regulator resulting in excellent power supply rejection ratio.

The device is qualified to meet the JEDEC standard for Pb-Free assembly and compliant to the RoHS directive.

**Electrical Performance**

Parameter	Min	Typ	Max	Units
<b>General</b>				
Output Frequency	13.5		160	MHz
Operating Temperature	-10/+70 -40/+85 -40/+105 -40/+125			°C
Stability Over Temperature	±100 ±50 ±25 ±20			ppm
Start Up Time			10	ms
Package Size	3.2 x 2.5 x 1.2			mm
<b>Supply</b>				
Supply Voltage (Vdd)	3.3 2.5			V
Supply Current	28			mA
Current, Output Disabled	10			µA
<b>Output</b>				
Output Signal	HCSL			
Output Logic Level				
Output Level - Logic High	550		990	mV
Output Level - Logic Low	-150		150	mV
Output Load	50 Ω to Ground			
Output Rise and Fall Time	0.3			ns
Duty Cycle	45		55	%
<b>Enable / Disable</b>				
Output Enable / Disable				
Output Enabled	Vdd x 0.7			V
Output Disabled	Vdd x 0.3			V
<b>Phase Noise &amp; Jitter</b>				
Phase Noise: (100 MHz)				
10 Hz offset	-65			dBc/Hz
100 Hz offset	-95			dBc/Hz
1kHz offset	-123			dBc/Hz
10kHz offset	-139			dBc/Hz
100kHz offset	-143			dBc/Hz
1MHz offset	-152			dBc/Hz
10MHz offset	-157			dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 100 MHz	0.17			ps

**Notes:**

- 1 Stability includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and aging
- 2 Rise and Fall times measured from 20% to 80% of a full output swing
- 3 Power Supply pin should be filtered. e.g. 0.1µF or 0.01 µF Capacitor for optimal performance.
- 4 The Output is Enabled if the Enable/Disable is left open.

**Maximum Ratings**

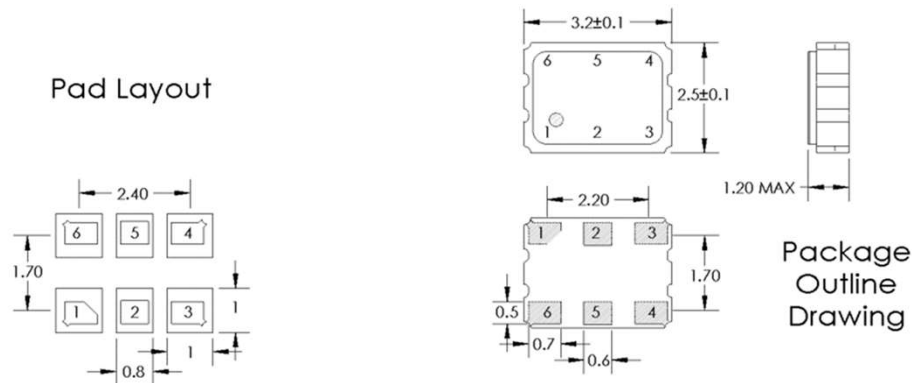
Storage Temp	-55°C to 125°C
Supply Voltage	-0.5V to +5.0V
Enable/Disable Voltage	-0.5V to Vdd+0.5V
Junction Temperature	+150 °C

**Maximum Ratings Notes:**

- 1 Stresses in excess of the absolute maximum ratings can permanently damage the device.
- 2 Exposure to absolute maximum ratings for extended periods may adversely affect device reliability.

**Package Information**

Pin #	Function
Pin 1	E/D = Enable / Disable or NC
Pin 2	E/D = Enable / Disable or NC
Pin 3	GND = Ground
Pin 4	OUT = Output
Pin 5	C-OUT = Complimentary Output
Pin 6	Vdd = Supply Voltage


**Handling and Construction**

Package Construction	Hermetic Ceramic
Contact Pads	Gold over Nickle
Pad Metal Thickness	Gold (0.3µm min - 1.0µm max) over Nickel
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	1500V
ESD, Charge Device Model	1500V

Ordering Information

**MV-XH163-3225G -**

XO, HCSL

3.2 x 2.5 x 1.2mm, 6 Pins

**X X X X**

① ② ③ ④

**- xxMxxxxx**

Frequency

① Voltage

B: 3.3 V

D: 2.5 V

② Temp Range

J: -10/+70 °C

K: -40/+85 °C

L: -40/+105 °C

③ Temp Stability

A: ±100 ppm

C: ±50 ppm

E: ±25 ppm

F: ±20 ppm

④ Enable

1: Enable on Pin 1

2: Enable on Pin 2