

MV-VP131-7050G is a Voltage Controlled Crystal Oscillator (VCXO) . This VCXO provide low phase noise and jitter performance over a wide operating temperature range, LV-PECL output and comes in a hermetic ceramic 7.0x5.0mm 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
General				
Output Frequency	80		170	MHz
Operating Temperature		-10/+70 -40/+85 -40/+105		°C
Stability Over Temperature		±50 ±25 ±20		ppm
Start Up Time			2	ms
Package Size		7.0 x 5.0 x 1.7		mm
Supply				
Supply Voltage (Vdd)	3.14	3.3	3.47	V
Supply Current		41	66	mA
Current, Output Disabled			800	µA
Tuning				
Absolute Pull Range		±50		ppm
Control Voltage to reach Pull Range	0		Vdd	V
Control Voltage Impedance	5			MΩ
Control Voltage Modulation BW	15	20		kHz
Output				
Output Signal		LV-PECL		
Output Logic Level				
Output Level - Logic High	Vdd-1.025	Vdd-0.950	Vdd-0.880	V
Output Level - Logic Low	Vdd-1.810	Vdd-1.700	Vdd-1.620	V
Output Load		50 Ω into Vdd-2V		
Output Rise and Fall Time		0.25	0.5	ns
Duty Cycle	45		55	%
Enable / Disable				
Output Enable / Disable				
Output Enabled	Vdd x 0.7			V
Output Disabled			Vdd x 0.3	V
Phase Noise & Jitter				
Phase Noise: (122.88 MHz)				
10 Hz offset		-70		dBc/Hz
100 Hz offset		-100		dBc/Hz
1kHz offset		-123		dBc/Hz
10kHz offset		-143		dBc/Hz
100kHz offset		-154		dBc/Hz
1MHz offset		-159		dBc/Hz
10MHz offset		-160		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 122.88 MHz		0.1		ps

Notes:

- 1 Pull Range tested with Vc = 0V to 3.0V
- 2 Standby current can measure as high as 1200µA from 85°C to 105°C for frequencies above 100MHz
- 3 Rise and Fall times measured from 20% to 80% of a full output swing
- 4 Power Supply pin should be filtered. e.g. 0.1µF or 0.01 µF Capacitor for optimal performance.
- 5 The Output is Enabled if the Enable/Disable is left open.

Maximum Ratings

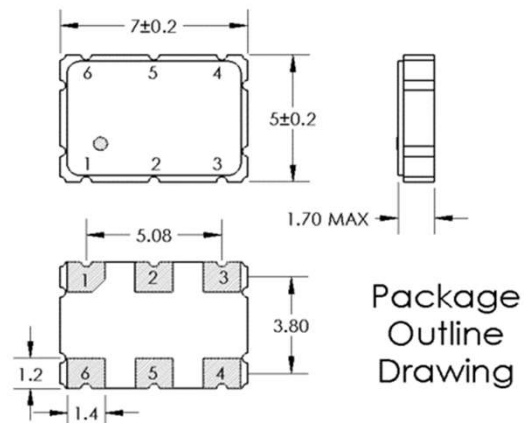
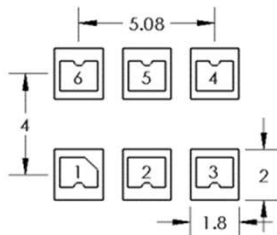
Storage Temp	-55°C to 125°C
Supply Voltage	-0.5V to +5.0V
Control Voltage	-0.5V to Vdd+0.5V
Enable/Disable Voltage	-0.5V to Vdd+0.5V
Junction Temperature	+150 °C

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

Pad Layout

Package Outline Drawing
Handling and Construction

Package Construction	hermetic ceramic
Contact Pads	Gold over Nickle
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	500V
ESD, Charge Device Model	500V

Ordering Information

MV-VP131-7050G - B x x C x - xxMxxxxx



① Voltage

B: 3.3 V

② Temp Range

J: -10/+70 °C

K: -40/+85 °C

L: -40/+105 °C

③ Temp Stability

C: ±50 ppm

E: ±25 ppm

F: ±20 ppm

④ Absolute Pull Range ⑤ Enable

C: ±50 ppm

O: No Enable Disable

H: Enable High

L: Enable Low

Part Number Configuration Notes:

- 1 Duty Cycle may extend to 40/60% at Temp Range of -40 to +105°C.