

MV-XP315-7050G is a Crystal Oscillator (XO) . This XO provides low jitter performance, 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  |
|------------------------------------------|-----------|---------------------|-----------|--------|
| <b>General</b>                           |           |                     |           |        |
| Output Frequency                         | 100       |                     | 320       | MHz    |
| Operating Temperature                    |           | -10/+70 to -55/+125 |           | °C     |
| Frequency Stability                      |           |                     |           |        |
| Stability Over Temperature               |           | ±100 to ±20         |           | ppm    |
| Start Up Time                            |           |                     | 10        | ms     |
| Package Size                             |           | 7.0 x 5.0 x 1.7     |           | mm     |
| <b>Supply</b>                            |           |                     |           |        |
| Supply Voltage (Vdd)                     |           | +2.5 to +3.3        |           | V      |
| Supply Current                           |           | 50                  | 65        | mA     |
| Current, Output Disabled                 |           |                     | 30        | µA     |
| <b>Output</b>                            |           |                     |           |        |
| Output Signal                            |           | LV-PECL             |           |        |
| Output Logic Level                       |           |                     |           |        |
| Output Level - Logic High                | Vdd-1.085 | 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                |           | 0.15                | 0.4       | 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: (156.25 MHz)                |           |                     |           |        |
| 10 Hz offset                             |           | -78                 |           | dBc/Hz |
| 100 Hz offset                            |           | -108                |           | dBc/Hz |
| 1kHz offset                              |           | -137                |           | dBc/Hz |
| 10kHz offset                             |           | -153                |           | dBc/Hz |
| 100kHz offset                            |           | -158                |           | dBc/Hz |
| 1MHz offset                              |           | -161                |           | dBc/Hz |
| 10MHz offset                             |           | -162                |           | dBc/Hz |
| Jitter                                   |           |                     |           |        |
| RMS Jitter: (12kHz - 20MHz) - 156.25 MHz |           | 0.05                |           | 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**

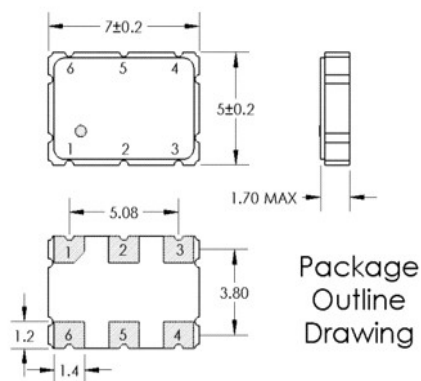
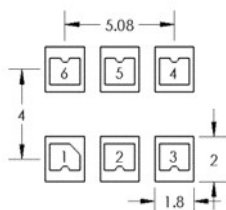
|                        |                   |
|------------------------|-------------------|
| Storage Temp           | -55°C to 150°C    |
| Supply Voltage         | -0.3V to +4.0V    |
| Enable/Disable Voltage | -0.3V to Vdd+0.3V |
| Junction Temperature   | +150 °C           |

**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 | NC = Make No Connection      |
| 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                         |
| 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   | 1000V                                    |

**Ordering Information**

**MV-XP315-7050G - x x x 1 - xxxMxxxx**

XO, LV-PECL

7.0 x 5.0 x 1.7mm, 6 Pins

① ② ③ ④

Frequency

① Voltage

B: 3.3 V  
H: 3.0 V  
C: 2.8 V  
D: 2.5 V

② Temp Range

J: -10/+70 °C  
K: -40/+85 °C  
L: -40/+105 °C  
N: -55/+125 °C

③ Temp Stability

A: ±100 ppm  
C: ±50 ppm  
E: ±25 ppm  
F: ±20 ppm

④ Enable

1: Enable on Pin 1