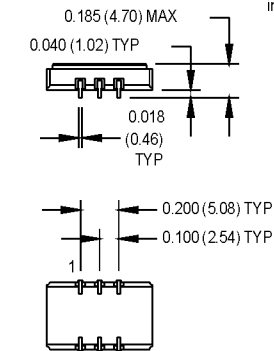
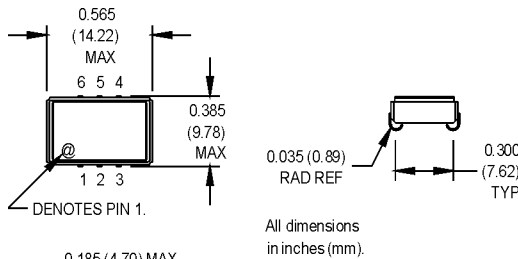


# MPV3 Series

## 9x14 mm, 3.3 Volt, LVPECL/LVDS, VCXO



- Versatile VCXO to 800 MHz with good jitter (3 ps typical)
- Used in low jitter clock synthesizers and SONET applications



### Pin Connections

| PIN | FUNCTION                |
|-----|-------------------------|
| 1   | Control Voltage         |
| 2   | Enable/Disable or N/C   |
| 3   | Ground/Case             |
| 4   | Output Q                |
| 5   | Output $\bar{Q}$ or N/C |
| 6   | +Vcc                    |

### Ordering Information

|                                |                                     |                                      |                                     |                                     |   |   |   |    |             |
|--------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|---|---|---|----|-------------|
| Product Series                 | MPV3                                | 1                                    | 0                                   | R                                   | 1 | L | J | -R | 00.0000 MHz |
| Temperature Range              | 1: 0°C to +70°C                     | 2: -40°C to +85°C                    | 6: -20°C to +70°C                   | 8: 0°C to +50°C                     |   |   |   |    |             |
| Stability                      | 0: Nominal per APR selection        |                                      |                                     |                                     |   |   |   |    |             |
| Output Type                    | R: Complementary, Enable            |                                      |                                     |                                     |   |   |   |    |             |
|                                | Z: Complementary, w/o Enable        |                                      |                                     |                                     |   |   |   |    |             |
| Absolute Pull Range            | 1: ±50 ppm (±35 ppm typ. Stability) | 2: ±100 ppm (±20 ppm typ. Stability) | 5: ±80 ppm (±25 ppm typ. Stability) | 8: ±25 ppm (±50 ppm typ. Stability) |   |   |   |    |             |
| Symmetry/Output Logic Type     | L: 45/55% LVDS                      | P: 45/55% PECL                       | H: 40/60% LVDS                      | Q: 40/60% PECL                      |   |   |   |    |             |
| Package/Lead Configurations    | J: J-lead                           |                                      |                                     |                                     |   |   |   |    |             |
| RoHS Compliance                | Blank: non-RoHS compliant part      |                                      |                                     |                                     |   |   |   |    |             |
|                                | -R: RoHS compliant part             |                                      |                                     |                                     |   |   |   |    |             |
| Frequency (customer specified) |                                     |                                      |                                     |                                     |   |   |   |    |             |

| PARAMETER                                    | Symbol       | Min.                                                                        | Typ.        | Max.        | Units  | Condition/Notes                               |
|----------------------------------------------|--------------|-----------------------------------------------------------------------------|-------------|-------------|--------|-----------------------------------------------|
| Frequency Range                              | F            | 0.75                                                                        |             | 800         | MHz    |                                               |
| Operating Temperature                        | Ta           | (See Ordering Information)                                                  |             |             |        |                                               |
| Storage Temperature                          | Ts           | -55                                                                         |             | +125        | °C     |                                               |
| Frequency Stability                          | $\Delta F/F$ | (See Ordering Information)                                                  |             |             |        | See Note 1                                    |
| Aging                                        |              |                                                                             |             |             |        |                                               |
| 1st Year                                     |              | -3/-5                                                                       |             | +3/+5       | ppm    | < 52 MHz / ≥ 52 MHz                           |
| Thereafter (per year)                        |              | -1/-2                                                                       |             | +1/+2       | ppm    | < 52 MHz / ≥ 52 MHz                           |
| Pullability/APR                              |              | (See Ordering Information)                                                  |             |             |        | See Note 2                                    |
| Control Voltage                              | Vc           | 0.3                                                                         | 1.65        | 3           | V      | Pin 1 voltage                                 |
| Linearity                                    |              |                                                                             | 5           | 10          | %      | Positive Monotonic Slope                      |
| Modulation Bandwidth                         | fm           | 10                                                                          |             |             | kHz    | -3 dB bandwidth                               |
| Input Impedance                              | Zin          | 50k                                                                         |             |             | Ohms   |                                               |
| Input Voltage                                | Vcc          | 3.135                                                                       | 3.3         | 3.465       | V      |                                               |
| Input Current                                | Icc          |                                                                             |             |             |        |                                               |
| 0.75 MHz to 26 MHz                           |              |                                                                             |             | 60/30       | mA     | PECL/LVDS                                     |
| 26 MHz to 104 MHz                            |              |                                                                             |             | 95/60       | mA     | PECL/LVDS                                     |
| 104 MHz to 800 MHz                           |              |                                                                             |             | 105/60      | mA     | PECL/LVDS                                     |
| Output Type                                  |              |                                                                             |             |             |        | PECL/LVDS                                     |
| Load                                         |              | 50 Ohms to Vcc -2 VDC<br>100 Ohm differential load                          |             |             |        | See Note 3<br>PECL waveform<br>LVDS waveform  |
| Symmetry (Duty Cycle)<br>(Per Symmetry Code) |              | (See Ordering Information)                                                  |             |             |        | Vcc -1.3 VDC (PECL)<br>50% of Waveform (LVDS) |
| Output Skew                                  |              |                                                                             |             | 200         | ps     |                                               |
| Differential Voltage                         | Vo           | 250                                                                         | 340         | 450         | mV     | LVDS only                                     |
| Logic "1" Level                              | Voh          | Vcc -1.02                                                                   |             |             | V      | PECL                                          |
| Logic "0" Level                              | Vol          |                                                                             |             | Vcc -1.63   | V      | PECL                                          |
| Rise/Fall Time                               | Tr/Tf        |                                                                             | 0.35<br>.50 | 0.55<br>1.0 | ns     | @ 20/80% LVPECL<br>@ 20/80% LVDS              |
| Enable Function                              |              | 80% Vcc min or N/C: output active<br>20% Vcc max: output disables to high-Z |             |             |        |                                               |
| Start up Time                                |              |                                                                             | 5           |             | ps     |                                               |
| Phase Jitter                                 | $\phi J$     |                                                                             | 3           | 5           | ps RMS | Integrated 12 kHz - 20 MHz                    |
| Phase Noise (Typical)                        |              |                                                                             |             |             |        | Offset from carrier                           |
| @ 19.44 MHz                                  |              | -60                                                                         | -90         | -112        | -140   | -150 dBc/Hz                                   |
| @ 155.52 MHz                                 |              | -60                                                                         | -90         | -112        | -123   | -120 dBc/Hz                                   |
| @ 622.08 MHz                                 |              | -60                                                                         | -90         | -108        | -108   | -105 dBc/Hz                                   |

- Stability given for deviation over temperature.
- APR specification inclusive of initial tolerance, deviation over temperature, shock, vibration, supply voltage, and aging.
- PECL load - see load circuit diagram #5. LVDS load - see load circuit diagram #9.

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## MtronPTI Lead Free Solder Profile

