

M6001, M6002, M6003 & M6004 Series

9x14 mm FR-4, 5.0 or 3.3 Volt, HCMOS/TTL, TCXO and VCTCXO



Features:

- Operating stabilities to ± 0.5 ppm
- Stratum III stability of ± 4.6 ppm (non-holdover)

Applications:

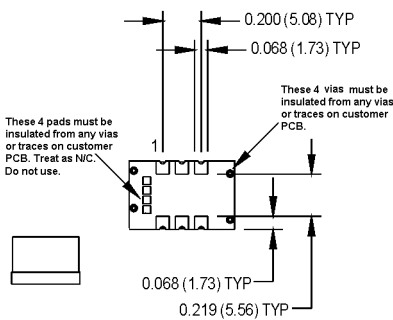
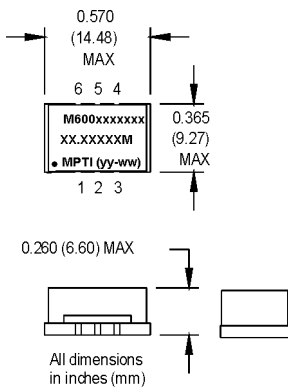
- Ideal for Signal Processing, Military/Avionic Communications, Flight Controls, WLAN, Basestations, DWDNM, SERDES, SONET/SDH, 10G and 40G Ethernet applications

Ordering Information

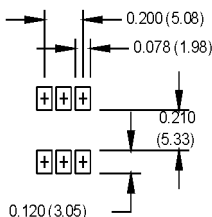
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|--|---------------|---|---|---|---|---|----|---------|-----|
| Product Series | M6001 - M6004 | 1 | L | F | C | K | -R | 00.0000 | MHz |
| M6001 = 3.3 V TCXO | | | | | | | | | |
| M6002 = 5.0 V TCXO | | | | | | | | | |
| M6003 = 3.3 V VCTCXO | | | | | | | | | |
| M6004 = 5.0 V VCTCXO | | | | | | | | | |
| Temperature Range | | | | | | | | | |
| 1: 0°C to +70°C | | | | | | | | | |
| 2: -40°C to +85°C | | | | | | | | | |
| 8: 0°C to +50°C | | | | | | | | | |
| Stability | | | | | | | | | |
| L: ± 4.6 ppm | | | | | | | | | |
| J: ± 1 ppm | | | | | | | | | |
| K: ± 2 ppm | | | | | | | | | |
| G: ± 0.5 ppm (0° to 50°C only) | | | | | | | | | |
| Frequency Control (Pin #1) | | | | | | | | | |
| F: Fixed (M6001 and M6002 only) | | | | | | | | | |
| V: Voltage Controlled (M6003 and M6004 only) | | | | | | | | | |
| Symmetry/Logic Compatibility | | | | | | | | | |
| C: 45/55% CMOS | | | | | | | | | |
| Package/Lead Configurations | | | | | | | | | |
| K: FR-4 6 pad | | | | | | | | | |
| D: DIP (contact factory) | | | | | | | | | |
| RoHS Compliant | | | | | | | | | |
| Blank: non-RoHS compliant part | | | | | | | | | |
| -R: RoHS compliant part | | | | | | | | | |
| Frequency (customer specified) | | | | | | | | | |

Pin Connections

| FUNCTION | PAD |
|------------------------|-----|
| N/C or Control Voltage | 1 |
| Tristate | 2 |
| Ground/Case | 3 |
| Output | 4 |
| N/C | 5 |
| +Vdd | 6 |



SUGGESTED SOLDER PAD LAYOUT



| PARAMETER | Symbol | Min. | Typ. | Max. | Units | Condition/Notes | |
|----------------------------------|--------------------------------|--|-------|--------|-----------------|-----------------------------------|------------|
| Frequency Range | F | 5 | | 30 | MHz | | |
| Operating Temperature | T _A | (See Ordering Information) | | | | | |
| Storage Temperature | T _S | -55 | | +105 | °C | | |
| Frequency Stability | | (See Ordering Information) | | | | | See Note 1 |
| Aging | | | | | | See Note 2 | |
| 1st Year | | | | 1.0 | ppm | | |
| 10 year aging | | | | 3.0 | ppm | | |
| Input Voltage | V _{dd} | 3.15 | 3.3 | 3.45 | V | M6001, M6003 | |
| | | 4.75 | 5.0 | 5.25 | V | M6002, M6004 | |
| Input Current | I _{dd} | | | 10 | mA | M6001, M6003 | |
| | | | | 20 | mA | M6002, M6004 | |
| Pullability | | ± 10 | | | ppm | M6003/M6004 only (positive slope) | |
| Control Voltage | V _c | 0.5 | 1.5 | 2.5 | V | M6003/M6004 only | |
| Modulation Bandwidth | f _m | 10 | | | kHz | M6003/M6004 only | |
| Input Impedance | Z _{in} | 50k | | | Ohms | M6003/M6004 only | |
| Output Type | | | | | | CMOS | |
| Load | | | 15 | | pF | | |
| Symmetry (Duty Cycle) | | (See Ordering Information) | | | | | |
| Logic "1" Level | V _{oh} | 90 % | | | V _{dd} | | |
| Logic "0" Level | V _{ol} | | | 10% | V _{dd} | | |
| Rise/Fall Time | T _r /T _f | | | 3 | ns | | |
| Tristate Function | | Input Logic "1": output active Input Logic "0": output disables | | | | | |
| Start up Time | | 10 | | | ms | | |
| Phase Noise (Typical) @19.44 MHz | | 10 Hz | 1 kHz | 10 kHz | 100 kHz | Offset from carrier | |
| | | -77 | -107 | -128 | -143 | -148 | |

1. Stability is inclusive of initial calibration, temperature, reflow, supply, load, shock, vibration, and ten year aging at 55°C.
2. "L" stability version only. All other stability options - initial calibration and deviation vs. temperature.

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