

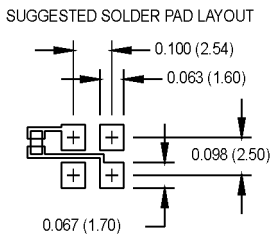
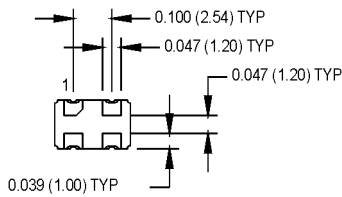
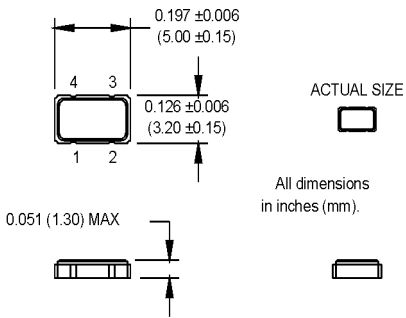
M2032, M2033, and M2034 Series

3.2 x 5.0 x 1.3 mm HCMOS Compatible Surface Mount Oscillators

- ± 20 ppm stability
- Tri-state or standby function
- Ideal for WLAN and IEEE802.11 Applications
- Low power applications



| Ordering Information | |
|--------------------------------|-----------------------------|
| Product Series | M203X D 8 Q C N 00.0000 MHz |
| M2032 = 2.85V | |
| M2033 = 3.0V | |
| M2034 = 3.3V | |
| Temperature Range | |
| D: -10°C to +70°C | |
| 6: -20°C to +70°C | |
| 2: -40°C to +85°C | |
| Stability | |
| 3: ± 100 ppm | 4: ± 50 ppm |
| 6: ± 25 ppm | 8: ± 20 ppm** |
| Output Type | |
| Q: Standby Function | T: Tristate |
| Symmetry/Logic Compatibility | |
| C: 45/55 CMOS | G: 40/60 CMOS |
| Package/Lead Configurations | |
| N: Leadless | |
| Frequency (customer specified) | |



Pin Connections

| PIN | Function |
|-----|------------------|
| 1 | Standby/Tristate |
| 2 | Ground |
| 3 | Output |
| 4 | +Vdd |

| PARAMETER | Symbol | Min. | Typ. | Max. | Units. | Condition |
|---------------------------|---|---|------|---------------------|--------|----------------------------|
| Frequency Range | F | 1.5 | | 80 | MHz | See Note 1 |
| Frequency Stability | $\Delta F/F$ | | | ± 20 | ppm | See Note 2 |
| Operating Temperature | T _A | (See Ordering Information) | | | | |
| Input Voltage | V _{dd} | 3.15 | 3.3 | 3.45 | V | 3.3V |
| | | 2.85 | 3.0 | 3.15 | V | 3.0V |
| | | 2.7 | 2.85 | 3.0 | V | 2.8V |
| Input Current | I _{dd} | | | | | |
| 1.500 to 20.000 MHz | | | | 15 | mA | 3.3V |
| 20.001 to 50.000 MHz | | | | 20 | mA | |
| 50.001 to 80.000 MHz | | | | 45 | mA | |
| Symmetry (Duty Cycle) | | 45 | | 55 | % | 1/2 V _{dd} |
| Rise/Fall Time | T _r /T _f | | | | | |
| 22.000 to 44.000 MHz | | | | 6 | ns | 10% to 90% V _{dd} |
| 80.000 MHz | | | | 4 | ns | 10% to 90% V _{dd} |
| Logic "1" Level | V _{oh} | 90% V _{dd} | | | V | |
| Logic "0" Level | V _{ol} | | | 10% V _{dd} | V | |
| Output Current | I _{oh} | -2 | | | mA | |
| | I _{ol} | +2 | | | mA | |
| Output Load | | | | 15 | pF | |
| Start-up Time | | | | 5 | ms | |
| Standby Current | | | | 10 | ms | |
| Standby/Tristate Function | | Pin 1 high or floating: clock signal output Pin 1 low: output disables to high impedance | | | | |
| Output Disable Time | | | | 150 | ns | |
| Output Enable Time | | | | 5 | ms | |
| Mechanical Shock | Per MIL-STD-202, Method 213, Condition C | | | | | |
| Vibration | Per MIL-STD-202, Method 201 & 204 | | | | | |
| Reflow Solder Conditions | 240°C for 10 s max | | | | | |
| Hermeticity | Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm.cc/s of helium) | | | | | |
| Solderability | Per EIAJ-STD-002 | | | | | |

1. Consult factory for available frequencies in this range.
2. Inclusive of calibration, deviation over temperature, supply voltage change, load change, shock, vibration, and 10 years aging

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MtronPTI Lead Free Solder Profile

