1703 E. Highway 50 Yankton, SD 57078 USA
Phone: 800-762-8800 or 605-665-9321 Fax: 605-665-1709
Website: www.mtronpti.com

# SPECIFICATION FOR SMT HCMOS OSCILLATOR
# MtronPTI P/N M2010S186

## Electrical Specifications:

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|---|---|---|---|---|---|---|
| Frequency of Operation | $F_O$ | | 10.000000 | | MHz | |
| **Frequency Stability** | | | | | | |
| Frequency Stability | ΔF/F | -100 | | +100 | ppm | Includes initial tolerance, deviation over temperature, voltage, load, shock, vibration, and aging. |
| Aging | | -10 | | +10 | ppm | Per year. |
| **RF Output** | | | | | | |
| Output Type | | HCMOS Compatible | | | | |
| Output Load | | | | 15 | pF | |
| Symmetry (duty cycle) | $T_{DC}$ | 40 | 50 | 60 | % | Ref to ½ $V_{DD}$ |
| Logic "1" Level | $V_{OH}$ | 4.0 | | | V | HCMOS load |
| Logic "0" Level | $V_{OL}$ | | | 0.4 | V | HCMOS load |
| Rise/Fall Time | $T_R/T_F$ | | | 10 | nS | From 20% to 80% $V_{DD}$ |
| Start-Up Time | | | | 10 | mS | |
| Tri-State Function | | 70% $V_{DD}$ or N/C | | | V | Pad 1: Output Enabled |
| | | | | 30% $V_{DD}$ | V | Pad 1: Output Disabled to high-Z |
| **Supply Voltage & Power Consumption** | | | | | | |
| Operating Voltage | $V_{DD}$ | 4.75 | 5.0 | 5.25 | V | |
| Operating Current | $I_{DD}$ | | | 20 | mA | |

## Environmental & Mechanical Requirements:

| | | | | | | |
|---|---|---|---|---|---|---|
| Operating Temperature | $T_A$ | -40 | | +85 | °C | |
| Storage Temperature | $T_S$ | -55 | | +125 | °C | |
| Mechanical Shock | Per MIL-STD-202, Method 213, Condition I | | | | | |
| Vibration | Per MIL-STD-202, Method 202 & 204 Condition C | | | | | |
| Thermal Shock | Per MIL-STD-202, Method 207, Condition B | | | | | |
| Seal | Per MIL-STD-202, Method 112, Condition C. | | | | | |
| Max. Soldering Conditions | See solder profile, Figure 1 | | | | | |
| Solderability | Per EIAJ-STD-002 | | | | | |
| Package Type | 4-pad 5 X 7 X 1.9 mm leadless ceramic. | | | | | |

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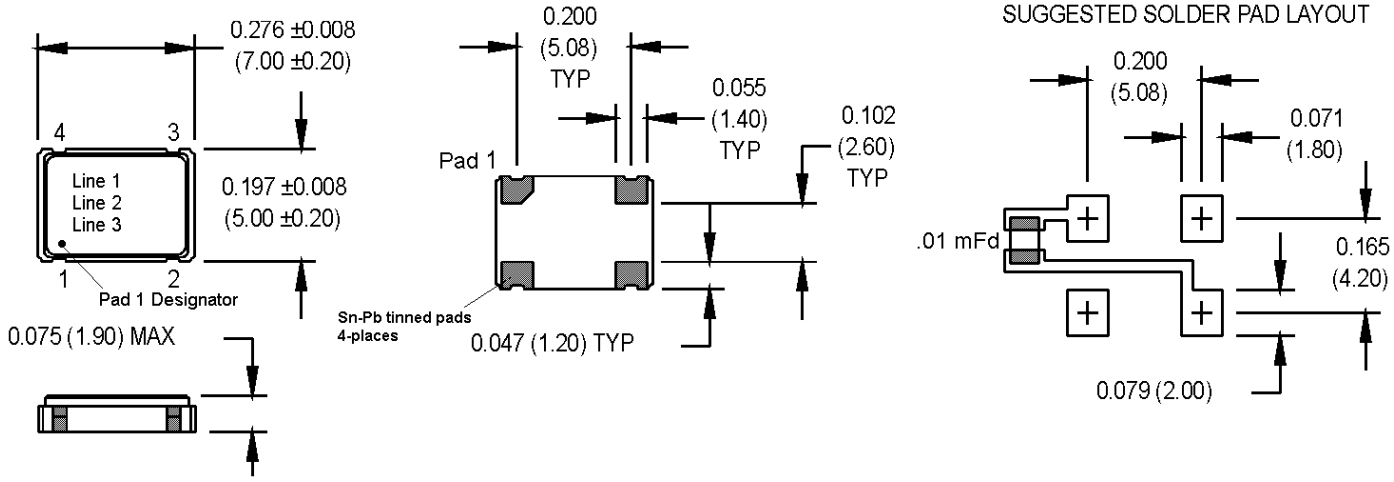
## Dimensions, Marking, and Pin Out Information:

| Pad | Function |
|---|---|
| 1 | Tristate |
| 2 | Ground |
| 3 | Output |
| 4 | $+V_{DD}$ |

| Part Marking | |
|---|---|
| Line 1 | M2010S186 |
| Line 2 | 10M0000 |
| Line 3 | M yy ww vv |

| Legend | |
|---|---|
| yy | Year |
| ww | Work week |
| vv | Factory code |



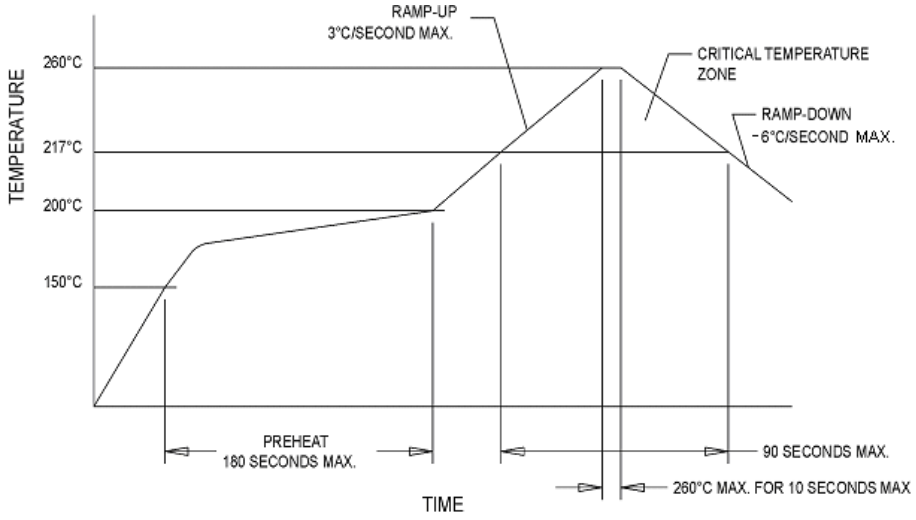




**Figure 1**

## Datasheet Revision Table:

| Date | Rev. | Author | Details of Revision |
|---|---|---|---|
| 06/02/14 | 0 | MM | Original release. |