



SPECIFICATION FOR SMT OSCILLATOR MtronPTI P/N M2002S184

I. GENERAL & ELECTRICAL REQUIREMENTS:

1. AVAILABLE FREQUENCY RANGE: 3.686400 MHz to 135.000000 MHz
2. FREQUENCY STABILITY: ± 100 ppm max.
3. OPERATING TEMPERATURE RANGE: -40°C to $+85^{\circ}\text{C}$
4. OPERATING VOLTAGE (Vdd): $3.3\text{ V} \pm 0.3\text{V}$
5. OPERATING CURRENT: 3.6864 MHz to 20.000 MHz 10 mA max.
20.001 MHz to 50.000 MHz 20 mA max.
50.001 MHz to 67.000 MHz 30 mA max.
67.001 MHz to 135.000 MHz 55 mA max.
6. OUTPUT TYPE: HCMOS/TTL Compatible
7. SYMMETRY: 40/60% ref. to $\frac{1}{2}$ Vdd
8. RISE/FALL TIME (Ref. 10% to 90%): 6 ns max. 3.6864 MHz to 50.000 MHz
4 ns max. 50.001 MHz to 80.000 MHz
2 ns max. 80.001 MHz to 135.000 MHz
9. OUTPUT LOGIC LEVELS: $V_{OL} = 10\%$ Vdd max. $V_{OH} = 90\%$ Vdd min.
10. OUTPUT LOAD: 15 pF/2 TTL max.
11. JITTER (Cycle-to-Cycle): 10 pS RMS max. 1- Sigma
12. TRISTATE FUNCTION (Pad 1): Logic "high" or "floating", clock signal output
Logic "low", output disables to high impedance state
13. TRISTATE INPUT CURRENT (Pad 1): 100 μA max.
14. START-UP TIME: 8.5 mS max. under load and over operating temperature.

II. ENVIRONMENTAL & MECHANICAL REQUIREMENTS:

1. SHOCK: MIL-STD-202, Method 213, Condition C.
2. VIBRATION: MIL-STD-202, Methods 201 & 204.
3. EARLY FAILURE RATE: 400 ppm max.
4. LONG TERM RELIABILITY: 75 FIT @ $+45^{\circ}\text{C}$
5. HERMETICITY: 1×10^{-8} atm cc/sec min.
6. SOLDERABILITY: Per EIAJ-STD-002
7. MAXIMUM SOLDERING CONDITIONS: See Figure 1
8. PACKAGE: 4 - Pad leadless ceramic package. RoHS compliant.

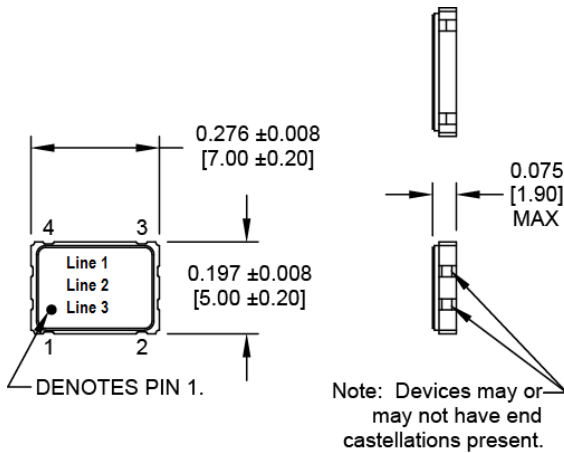
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III. DIMENSIONS AND MARKING:

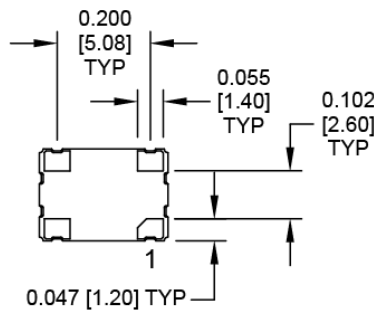
Pad	Function
1	Tristate
2	Ground
3	Output
4	+V _{DD}

Part Marking	
Line 1	M2002S184
Line 2	XXMXXX
Line 3	M yywwvv

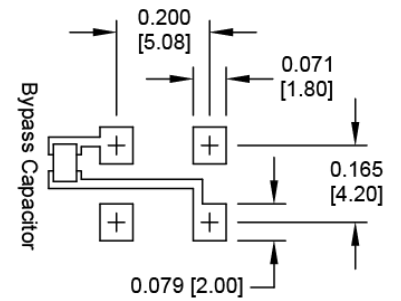
Legend	
yy	Year
ww	Work week
vv	Factory code



All dimensions in inches [mm].

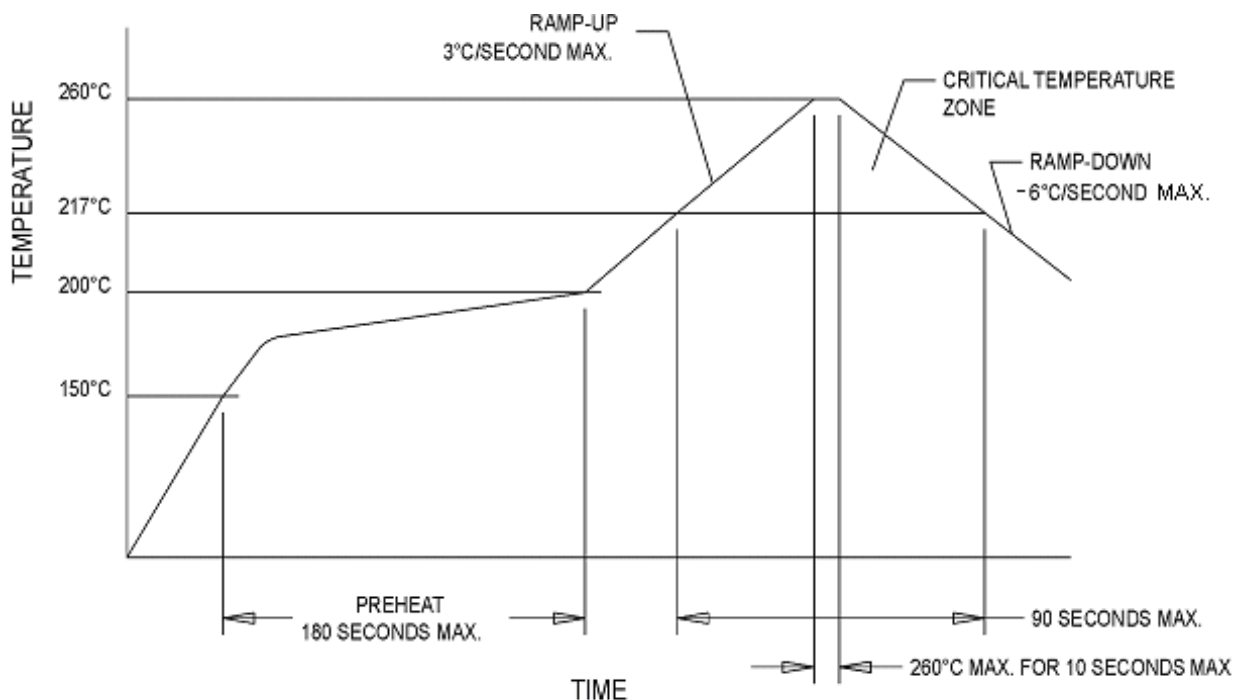


SUGGESTED SOLDER PAD LAYOUT



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IV. MAXIMUM SOLDERING CONDITIONS:



V. DATA SHEET REVISION TABLE:

Date	Rev.	PCN	Details of Revision
1/5/04	0	N/A	Original release.
3/9/04	A	N/A	Changed to allow for coverage of frequency range of 3.6864 MHz to 40 .000 MHz.
4/27/05	B	N/A	Added RoHS compliant designation and Figure Max. Reflow Profile. Added customer P/N.
11/7/05	C	N/A	Added Tri-state Input Current spec.
10/17/06	D	N/A	Changed Marking format.
2/5/08	E	N/A	Added extended frequency range to 135 MHz. Supersedes 10/17/06 release.
5/20/11	F	N/A	Changed Jitter Spec to 10 ps RMS max. 1-Sigma.
06/18/18	G	N/A	MM: Updated mechanical dimensions