



## SPECIFICATION FOR RoHS 6 COMPLIANT HCMOS SMT OSCILLATOR MtronPTI P/N M2002T199

### Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F <sub>O</sub>		10.000000		MHz	
<b>Frequency Stability</b>						
Frequency Stability	ΔF/F	-50		+50	ppm	Includes initial accuracy @ +25°C and deviation over operating temperature range.
<b>RF Output</b>						
Output Type		HCMOS Compatible				
Output Load				15	pF	
Symmetry (duty cycle)	T <sub>DC</sub>	45	50	55	%	Ref to ½ V <sub>DD</sub>
Logic "1" Level	V <sub>OH</sub>	90% V <sub>DD</sub>			V	HCMOS load
Logic "0" Level	V <sub>OL</sub>			10% V <sub>DD</sub>	V	HCMOS load
Rise/Fall Time	T <sub>R</sub> /T <sub>F</sub>			7	nS	From 20% to 80% V <sub>DD</sub>
Start-Up Time				10	mS	
Standby Current				10	μA	
Standby Logic		70% V <sub>DD</sub> or N/C			V	Pad 1: Output Enabled
				30% V <sub>DD</sub>	V	Pad 1: Output Disabled to high-Z
<b>Supply Voltage &amp; Power Consumption</b>						
Operating Voltage	V <sub>DD</sub>	2.97	3.3	3.63	V	
Operating Current	I <sub>DD</sub>			55	mA	
<b>Additional Specifications</b>						
Phase Jitter	Φ <sub>J</sub>			1.5	pS RMS	Integrated 12kHz to 5 MHz
Accumulated Jitter				5	pS RMS	1-Sigma, 20,000 Consecutive Periods
Peak to Peak Jitter				50	pS pk-pk	100,000 Random Periods

### Environmental & Mechanical Requirements:

Operating Temperature	T <sub>A</sub>	-20		+70	°C	
Storage Temperature	T <sub>S</sub>	-55		+125	°C	
Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sinewave)					
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Thermal Cycle	Per MIL-STD-883, Method 1010, B (-55°C to 125°C, 15 min. dwell, 10 cycles)					
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 <sup>-8</sup> atm cc/s of Helium)					
Solderability	Per EIAJ-STD-002					
Max. Soldering Conditions	See solder profile, Figure 1					
Package Type	4-pad 5 X 7 X 1.9 mm leadless ceramic.					

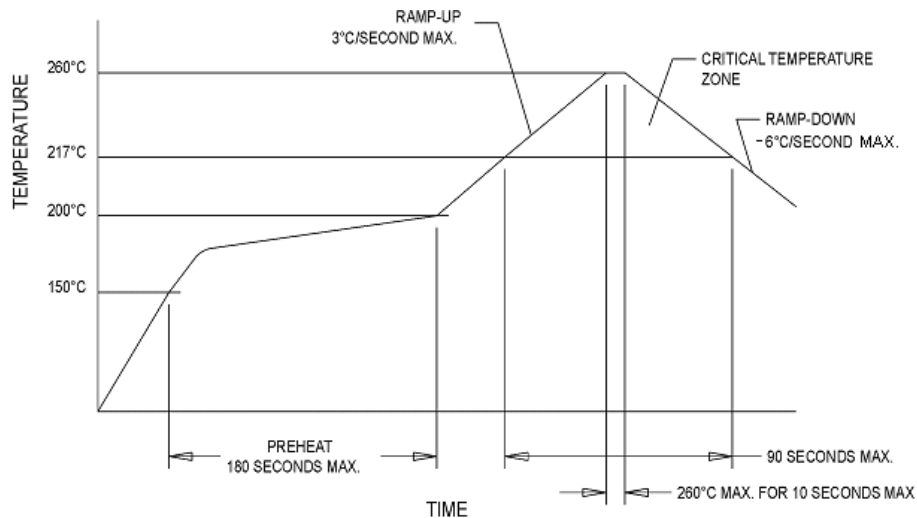
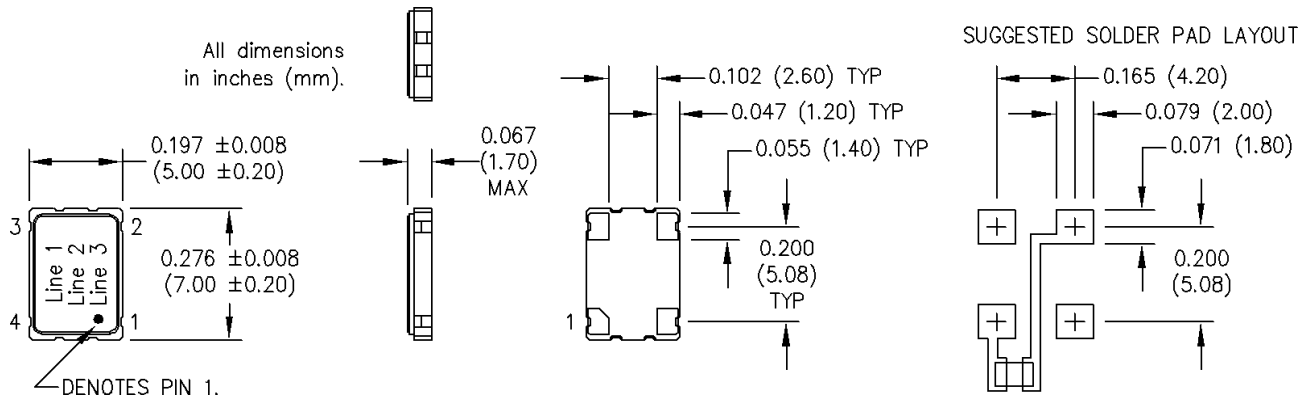
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**Dimensions, Marking, and Pin Out Information:**

Pad	Function
1	Standby
2	Ground
3	Output
4	+V <sub>DD</sub>

Part Marking	
Line 1	M2002T199
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
10/17/13	0	MM	Original release.