



## SPECIFICATION FOR RoHS 6 COMPLIANT HCMOS SMT OSCILLATOR MtronPTI P/N M2002T217

### Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F <sub>O</sub>		12.000000		MHz	
<b>Frequency Stability</b>						
Frequency Stability	ΔF/F	-50		+50	ppm	Includes initial accuracy @ +25°C and deviation over operating temperature range.
Aging		-3.0		+3.0	ppm	1 <sup>st</sup> year
		-2.0		+2.0		Thereafter (per year)
<b>RF Output</b>						
Output Type		HCMOS/TTL Compatible				
Output Load				15/2	pF/TTL	
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
		V <sub>DD</sub> - 0.5			V	TTL Load
Logic "0" Level	V <sub>OL</sub>			10% V <sub>DD</sub>	V	HCMOS load
				0.5		TTL Load
Rise/Fall Time	T <sub>R</sub> /T <sub>F</sub>			6	nS	10% to 90% V <sub>DD</sub> HCMOS load 0.5 V to 2.4 V TTL load
Start-Up Time				10	mS	
Output Current				±4	mA	
<b>Additional Specifications</b>						
Random Jitter			4	10	pS RMS	1-Sigma
<b>Supply Voltage &amp; Power Consumption</b>						
Operating Voltage	V <sub>DD</sub>	3.0	3.3	3.6	V	
Operating Current	I <sub>DD</sub>			20	mA	

### Environmental & Mechanical Requirements:

Operating Temperature	T <sub>A</sub>	-40		+85	°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	N/C
2	Ground
3	Output
4	+V <sub>DD</sub>

Part Marking	
Line 1	M2002T217
Line 2	12M0000
Line 3	M yy ww vv

Legend	
yy	Year
ww	Work week
vv	Factory code

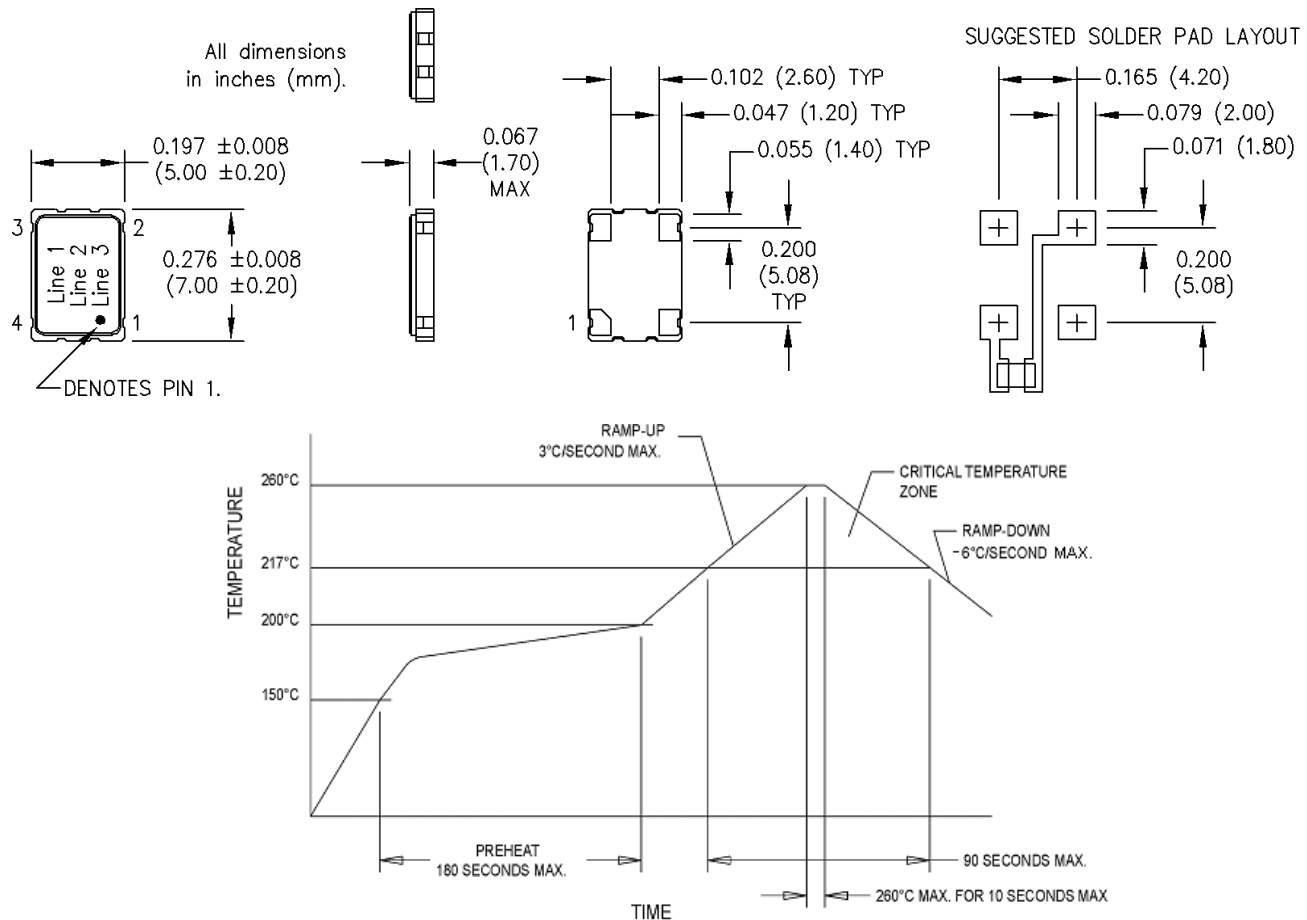


Figure 1

### Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
11/20/13	0	MM	Original release.
1/15/14	A	MM	Updated customer part number.
1/17/14	B	MM	Updated parameters