



SPECIFICATION FOR RoHS 6 COMPLIANT HCMOS SMT OSCILLATOR MtronPTI P/N M2002T224

Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F_o		2.048000		MHz	
Frequency Stability						
Frequency Stability	$\Delta F/F$	-25		+25	ppm	Includes initial accuracy @ +25°C and deviation over operating temperature range.
Aging		-3.0		+3.0	ppm	1 st year
		-2.0		+2.0		Thereafter (per year)
RF Output						
Output Type		HCMOS/TTL Compatible				
Output Load				15/2	pF/TTL	
Symmetry (duty cycle)	T_{DC}	45	50	55	%	Ref to $\frac{1}{2} V_{DD}$
Logic "1" Level	V_{OH}	90% V_{DD}			V	HCMOS load
		$V_{DD} - 0.5$			V	TTL Load
Logic "0" Level	V_{OL}			10% V_{DD}	V	HCMOS load
				0.5		TTL Load
Rise/Fall Time	T_R/T_F			6	nS	10% to 90% V_{DD} HCMOS load 0.5 V to 2.4 V TTL load
Tri-State Function		Logic "1" Logic "0" or Open				Pad 1: Enables Output Pad 1: Disables Output to a High-Z
Start-Up Time				10	mS	
Output Current				± 4	mA	
Additional Specifications						
Random Jitter			4	10	pS RMS	1-Sigma
Supply Voltage & Power Consumption						
Operating Voltage	V_{DD}	3.0	3.3	3.6	V	
Operating Current	I_{DD}			10	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 C (100 g's, 6 ms duration, $\frac{1}{2}$ 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 (1×10^{-8} 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	Tri-State
2	Ground
3	Output
4	+V _{DD}

Part Marking	
Line 1	M2002T224
Line 2	2M0480
Line 3	M yy ww vv

Legend	
yy	Year
ww	Work week
vv	Factory code

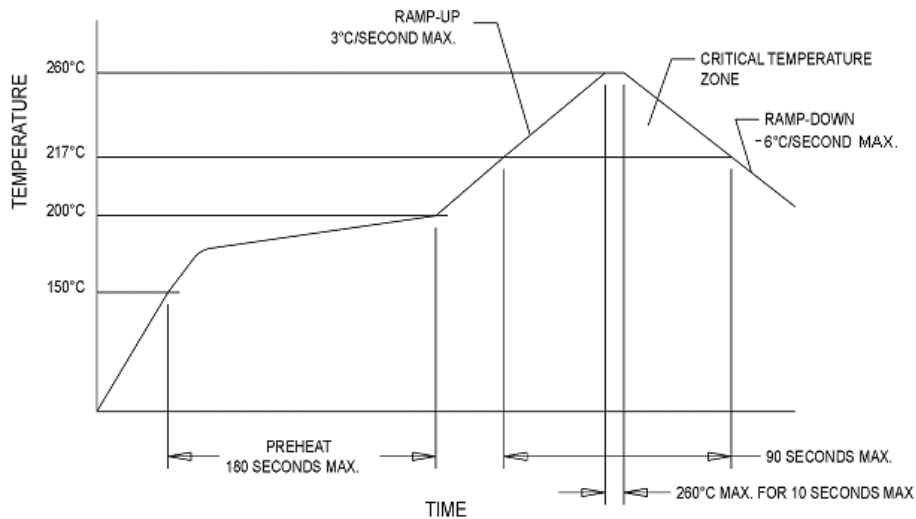
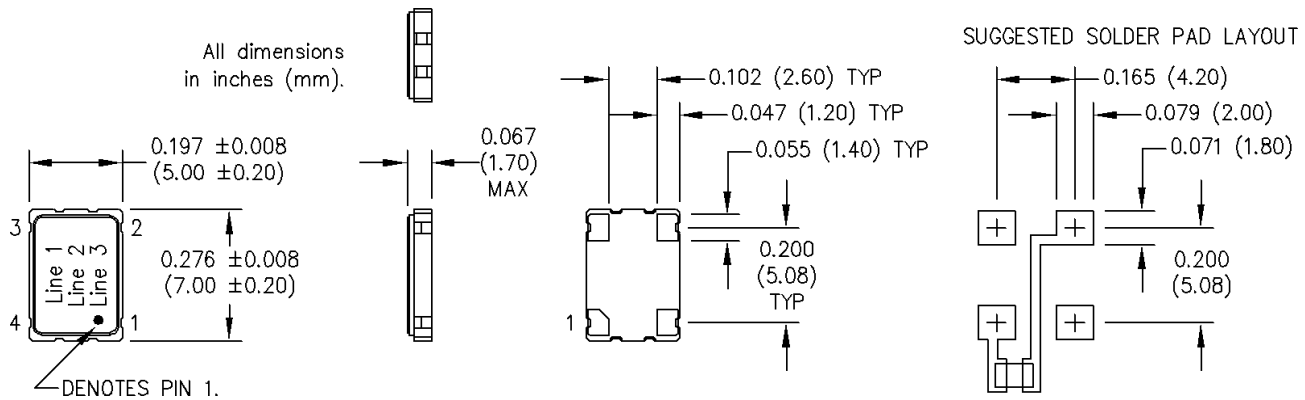


Figure 1

Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
04/03/14	0	MM	Original release.