MtronPTI ...when timing matters

1703 E. Highway 50 Yankton, SD 57078 USA
Phone: 800-762-8800 or 605-665-9321 Fax: 605-665-1709
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SPECIFICATION FOR SMT – GULLWING OSCILLATOR
MtronPTI P/N: M2002S448

I. General & Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F_O		44.000000		MHz	
Initial Accuracy		-25		+25	ppm	@ +23°C ± 3°C
Frequency Stability						
Frequency Stability	ΔF/F	-100		+100	ppm	Includes initial tolerance ±25ppm, deviation over temperature, shock, vibration, voltage & load variations, and aging
RF Output						
Output Type		HCMOS/TTL Compatible				
Output Load				15	pF	
Symmetry (duty cycle)	T_{DC}	40	50	60	%	Ref to ½ V_{DD}
Logic "1" Level	V_{OH}	90% V_{DD}			V	15pF load
Logic "0" Level	V_{OL}			10% V_{DD}	V	15pF load
Rise/Fall Time	T_R/T_F			10	nS	10% to 90% Output Levels
Start-Up Time				10	ms	
Enable/Disable Time				150	ns	
High Level Input Voltage	V_{IH}	2.0			V	V_{DD} = 3.3V, IH = 10uA
Tristate Logic		Logic "1" or Open			V	Pad 1: Output Enabled
		Logic "0"			V	Pad 1: Output Disabled to high-Z
Supply Voltage & Power Consumption						
Operating Voltage	V_{DD}	2.97	3.30	3.63	V	
Operating Current	I_{DD}			15	mA	@+25°C, 50MHz, 15pF
				4	mA	Oscillation Shutdown: Pin 1 = LOW, Pin 3 = HIGH

II. Environmental & Mechanical Requirements:

Operating Temperature	T_A	-55		+125	°C	
Storage Temperature	T_S	-55		+125	°C	
Vibration	MIL-STD-202, Methods 201 & 204					
Mechanical Shock	MIL-STD-202, Method 213, Condition C					
Hermeticity	MIL-STD-883, Method 1014, Test Condition A1 for Fine Leak, Test Condition C1 for Gross Leak					
Lead Attachment	Thermo-compression Weld using Copper Leads and Gold Pads					
Lead Pull Test	Shall withstand 8oz. pull per MIL-STD-883, Method 2004, Condition A					
Solderability	Per MIL-STD-883, Method 2003					
Lead Finish	Hot Solder Dipped					
Max. Soldering Conditions	+260°C for 10 secs. max., Figure 1					
Package Type	Pad leadless ceramic package with (4) Gullwing Leads attached (M2 Type)					
Part Marking	All parts that have completed all test and screen requirements shall be marked with a dot on the top surface					

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III. Test/Screen Requirements:

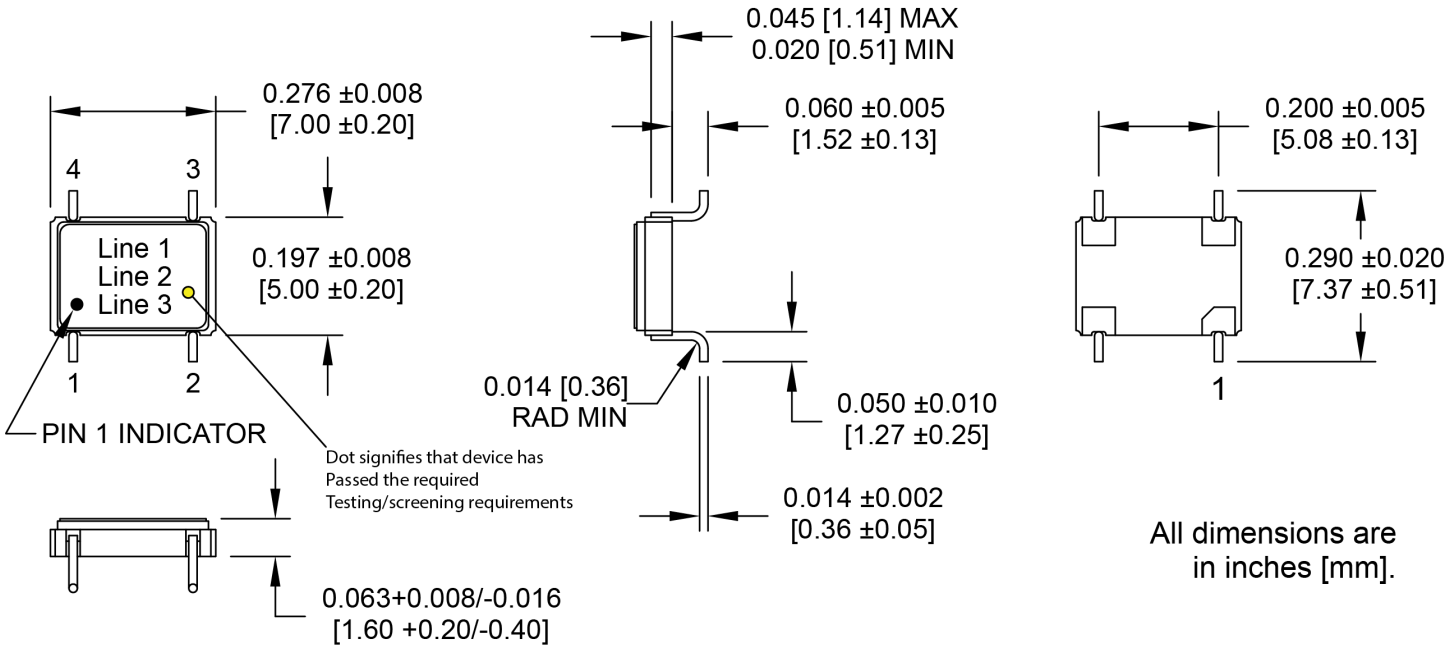
Product Testing	All lots supplied to Hamilton shall have all electrical parameters shown in Table I verified at -55°C to +125°C.
Date Code	All parts from one lot should be from one date code. Product should be no older than one year from receiving date of the purchase order from Hamilton.
Visual Inspection	100% external inspection shall be performed under a minimum 30x magnification to validate that there are no flaws associated with the Lead attach – positioning, connection, and integrity of lead and carrier should be inspected. Per Mil-STD-883, Method 2009.

IV. Dimensions, Marking, and Pin Out Information:

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

Part Marking	
Line 1	M2002S448
Line 2	44M0000
Line 3	M yy ww

Legend	
yy	Year
ww	Work week



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V. Soldering Conditions

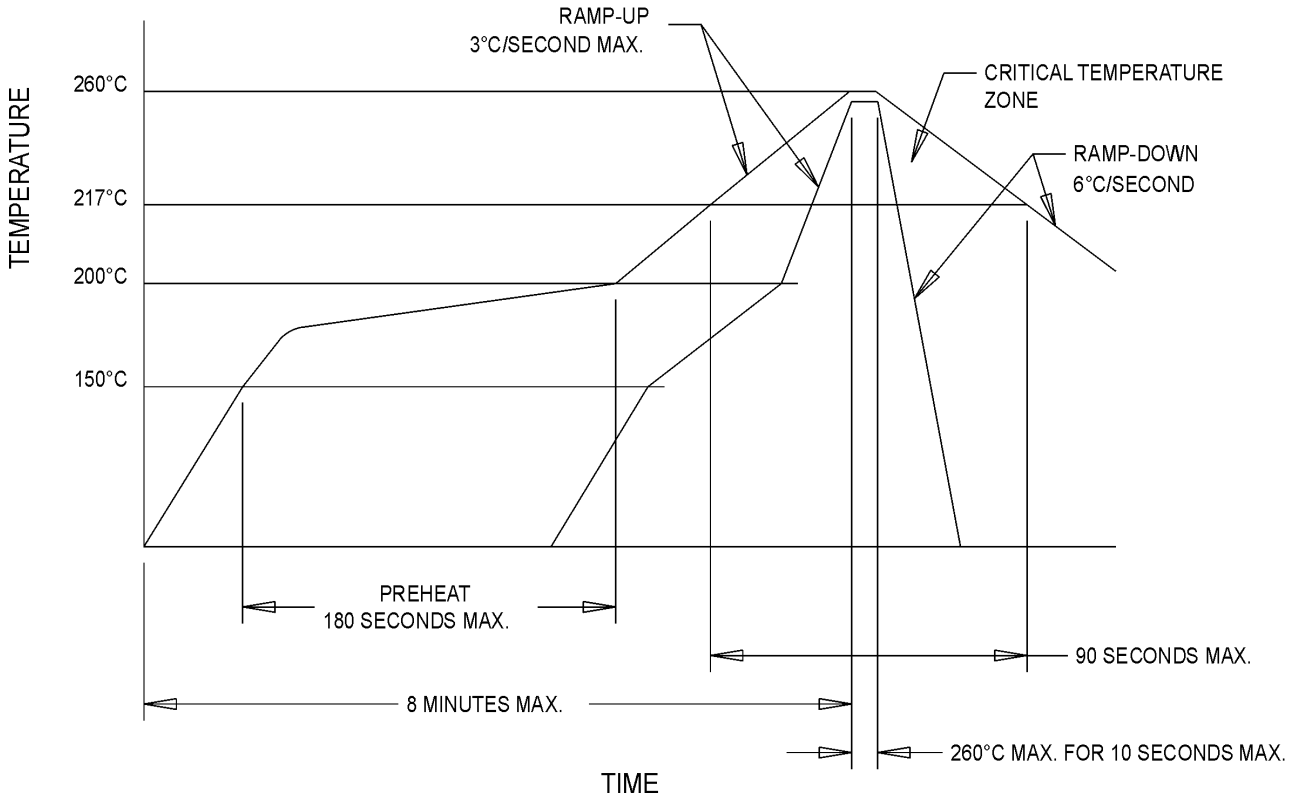

Figure 1

VI. Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
07/17/05	0	MM	Original release.
04/19/18	A	MM	Updated datasheet to be in line with customer drawing.
10/22/18	B	MM	Updated dimensions to be in line with customer drawing & removed RoHS symbol.