



## SPECIFICATION FOR COMPLIANT HCMOS SMT OSCILLATOR MtronPTI P/N M2002T231

### Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F <sub>O</sub>		3.686400		MHz	
<b>Frequency Stability</b>						
Frequency Stability	ΔF/F	-100		+100	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>	40	50	60	%	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	V	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
Tri-State Function		Logic "1" Logic "0" or Open				Pin 1: Enables Output Pin 1: Disables Output to a High-Z
Start-Up Time				10	mS	
Output Current			±8		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>			10	mA	

### Environmental & Mechanical Requirements:

Operating Temperature	T <sub>A</sub>	-55		+125	°C	
Storage Temperature	T <sub>S</sub>	-55		+125	°C	
Mechanical Shock	1000 G's, 0.35 mS ½ sine wave, 3 shocks in each plane					
Vibration	10-2000 Hz of .06" d.a or 20G's whichever is less					
Humidity	Resistant to 85° R.H. at 85°C					
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	5 X 7 mm Gull-Wing leads.					

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

Pad	Function
1	Tri-State
2	Ground
3	Output
4	+V <sub>DD</sub>

Part Marking	
Line 1	M2002T231
Line 2	3M6864
Line 3	M yy ww

Legend	
yy	Year
ww	Work week
vv	Factory code

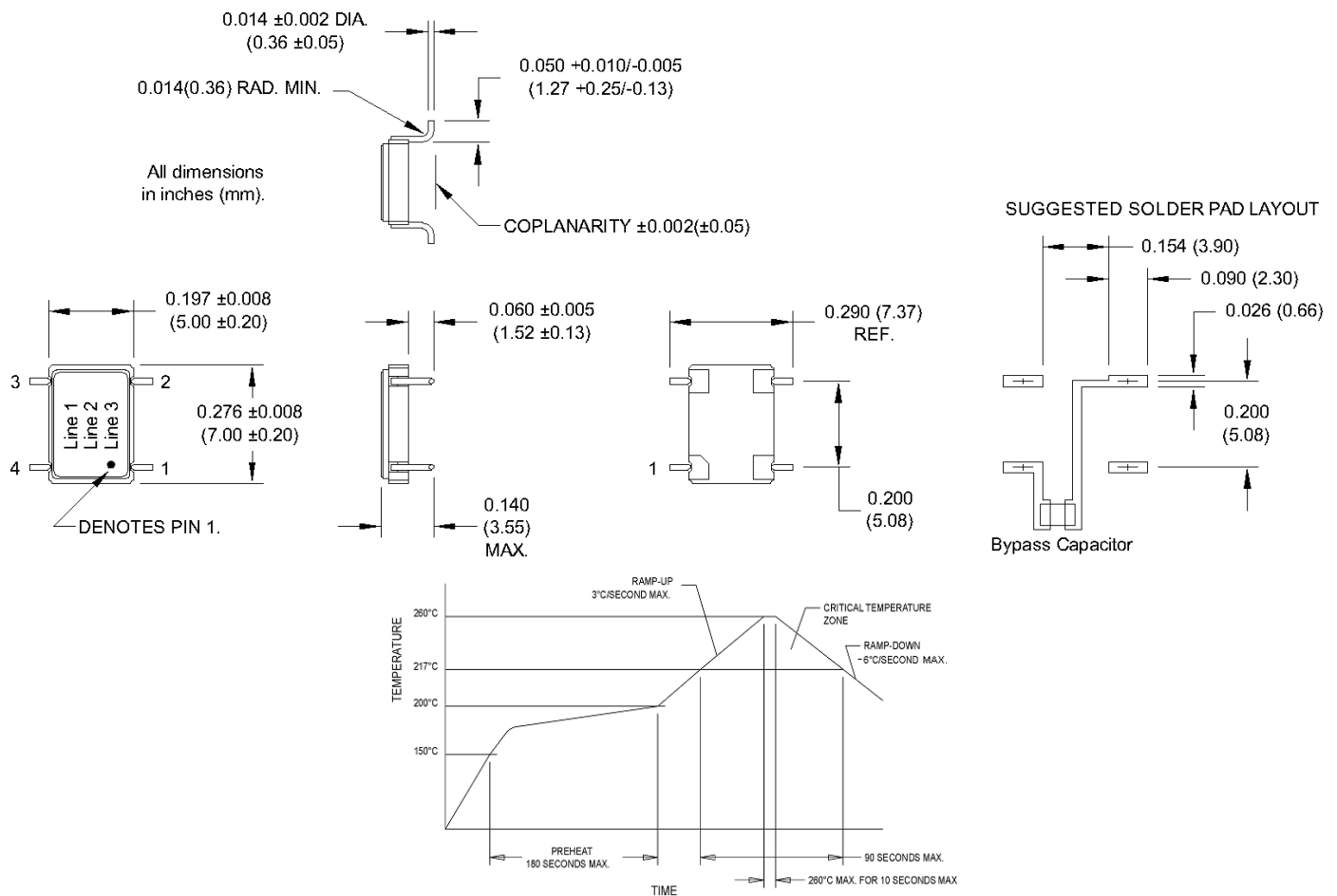


Figure 1

### Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
04/25/14	0	MM	Original release.
05/05/14	A	MM	Updated package drawing
05/16/14	B	MM	Updated environmental requirements.
05/27/16	C	MM	Removed RoHS designation.
09/27/18	D	MM	Suggested solder pad layout added.
06/13/19	E	BRR	Honeywell part number added.