



1703 E. Highway 50 Yankton, SD 57078 USA  
 Phone: 800-762-8800 or 605-665-9321 Fax: 605-665-1709  
 Website: www.mtronpti.com

## SPECIFICATION FOR SMT OSCILLATOR MtronPTI P/N M2002S746

### Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F <sub>O</sub>		20.000000		MHz	
Frequency Stability	ΔF/F	-50		+50	ppm	
Operating Temperature	T <sub>A</sub>	-40		+85	°C	
Storage Temperature	T <sub>S</sub>	-55		+125	°C	
Aging		-3		+3	ppm	1 <sup>st</sup> year
		-2		+2	ppm	Thereafter (per year)
Operating Voltage	V <sub>DD</sub>	3.00	3.3	3.60	V	
Operating Current	I <sub>DD</sub>			20	mA	
Output Type		HCMOS/TTL Compatible				
Output Load				15/2	pF/TTL	
Symmetry (duty cycle)	T <sub>DC</sub>	45		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>			6	ns	From 10% to 90% V <sub>DD</sub>
Random Jitter	R <sub>J</sub>			10	ps RMS	1-Sigma
Start-up Time	T <sub>SU</sub>			10	ms	

### Environmental & Mechanical Requirements:

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 mm leadless ceramic. Sn-Pb tinned pads.
Process Flow	See Appendix 1, page 3.

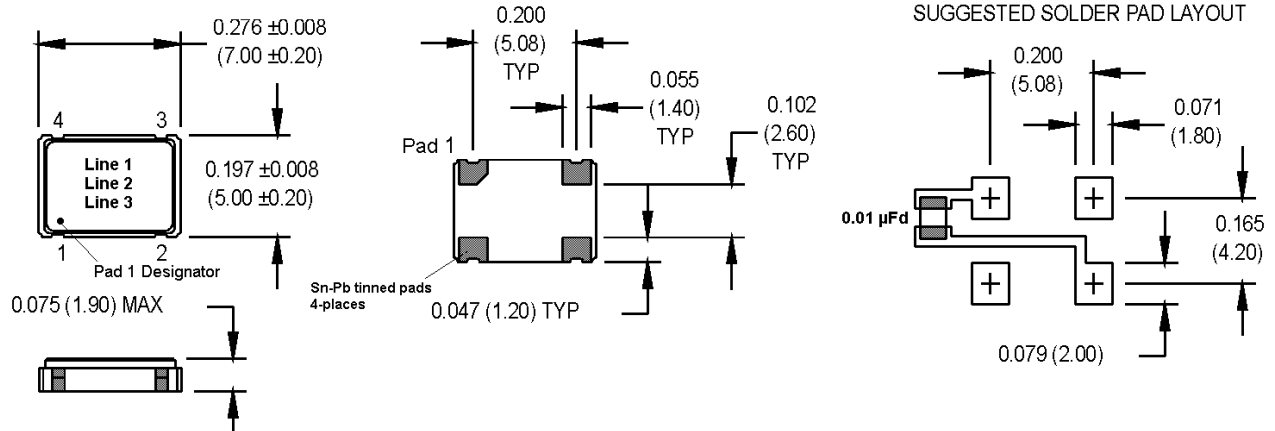
### Dimensions, Marking, and Pin Out Information:

Pad	Function
1	N/C
2	Ground
3	Output

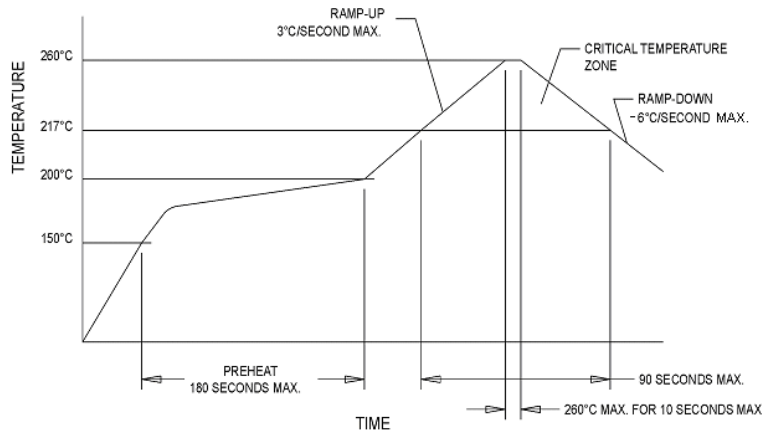
Part Marking	
Line 1	M2002S746
Line 2	20M0000
Line 3	M yyww

Legend	
yy	Year
ww	Work week

## SPECIFICATION FOR SMT OSCILLATOR MtronPTI P/N M2002S746



**Figure 1**



**IV. DATA SHEET REVISION TABLE:**

Date	Rev.	Author	Details of Revision
9/20/07	0	N/A	Original release.
12/01/16	A	MM	Updated datasheet format and added customer part number.