P.O. Box 630 100 Douglas Ave. Yankton, SD 57078 USA
Phone: 800-762-8800 or 605-665-9321 Fax: 605-665-1709
Website: www.mtronpti.com

SPECIFICATION FOR HCMOS COMPATIBLE SMT OSCILLATOR
MtronPTI P/N M2010S149

Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F_O		19.660800		MHz	
Frequency Stability	ΔF/F	-100		+100	ppm	Includes initial tolerance, deviation over temperature, supply voltage & load changes, shock, vibration and 10 yr. aging
Operating Temperature	T_A	0		+70	°C	
Storage Temperature	T_S	-55		+125	°C	
Aging		-3		+3	ppm	1st year
		-2		+2	ppm	Thereafter (per year)
Operating Voltage	V_{DD}	4.5	5.0	5.5	V	
Absolute Max. Voltage		-0.5		+7.0		
Operating Current	I_{DD}			27	mA	
Output Type		HCMOS Compatible				
Output Load				50	pF	
Symmetry (duty cycle)	T_{DC}	45		55	%	Ref to ½ V_{DD}
Logic "1" Level	V_{OH}	4.5			V	HCMOS load
Logic "0" Level	V_{OL}			0.55	V	HCMOS load
Output Current	I_{OH}	-16			mA	
	I_{OL}			+16	mA	
Rise/Fall Time	T_R/T_F			6	ns	From 10% to 90% V_{DD}
Jitter (RMS)	R_j			5	ps	1-Sigma
Start-Up Time				10	ms	
Tri-state Enable Voltage	V_{ih}	70% V_{DD}			V	Pad 1
Tri-state Disable Voltage	V_{il}			0.8	V	Pad 1
Tri-state Enable Time				100	ms	
Tri-state Disable Time				100	ns	

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^{-8} atm cc/s of Helium)
Solderability	Per EIAJ-STD-002
Max. Soldering Conditions	See solder profile, Figure 1
Package Type	5 X 7 X 1.4 mm leadless ceramic. RoHS compliant.

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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	M2010S149
Line 2	19M6608
Line 3	M yywwvv

Legend	
yy	Year
ww	Work Week
vv	Factory code

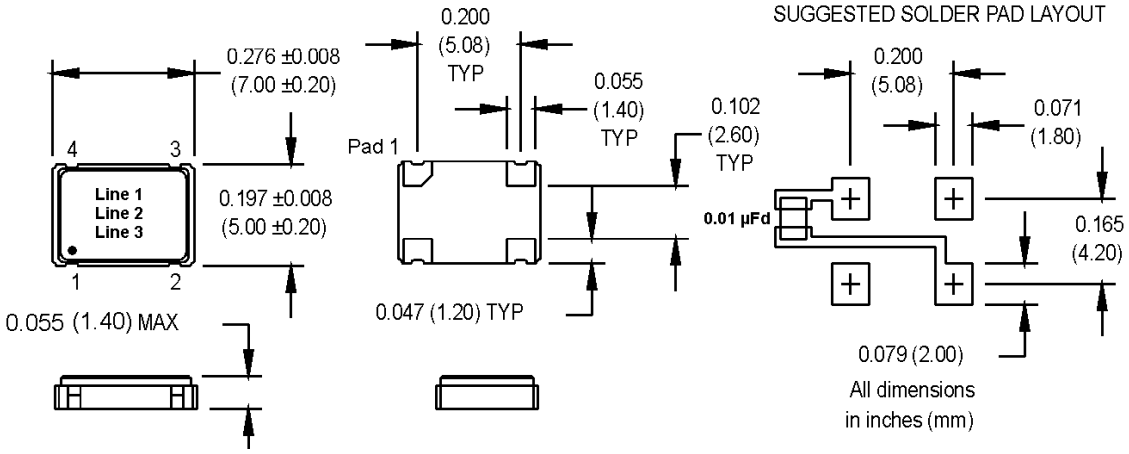
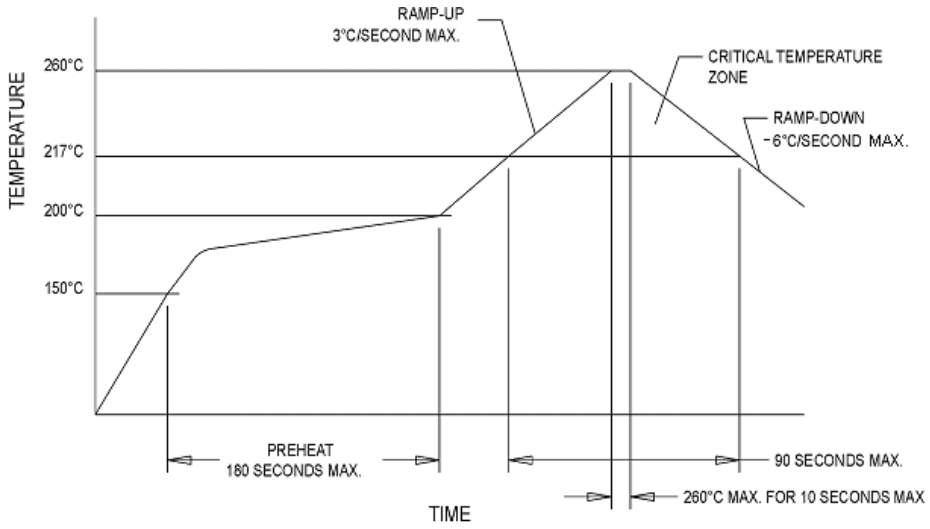


Figure 1



Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
1/4/10	0	WNJ	Original release.
8/6/10	A	WNJ	Change Tri-state Disable voltage to 0. 8 V max. from 30% Vdd max.