MtronPTI ...when timing matters

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 HCMOS COMPATIBLE SMT OSCILLATOR
MtronPTI P/N M2010S150

Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F_O		10.000000		MHz	
Frequency Stability	ΔF/F	-70		+70	ppm	Includes initial tolerance, deviation over temperature.
Frequency Vs. Supply		-10		+10	ppm	For ± 0.5 V voltage change.
Frequency Vs. Aging		-10		+10	ppm	First year @ +25°C
		-20		+20	ppm	Over 20 yrs.
Total Frequency Deviation		-100		+100	ppm	Includes initial tolerance, deviation over temperature, supply, and aging.
Operating Temperature	T_A	-55		+125	°C	
Storage Temperature	T_S	-65		+125	°C	
Operating Voltage	V_{DD}	4.5	5.0	5.5	V	
Operating Current	I_{DD}			15	mA	15 pF load
Power Dissipation				400	mW	
Output Type		HCMOS Compatible				
Output Load				15	pF	
Symmetry (duty cycle)	T_{DC}	45		55	%	Ref to ½ V_{DD}
Logic "1" Level	V_{OH}	3.0			V	@ 0.6 mA I_{OH}
	V_{OH}	4.3			V	@0.19 mA I_{OH}
Logic "0" Level	V_{OL}			0.4	V	@ 0.6 mA I_{OL}
Rise/Fall Time	T_R/T_F			10	ns	From 10% to 90% V_{DD}
Tri-state Enable Voltage	V_{ih}	70% V_{DD}			V	Pad 1
Tri-state Disable Voltage	V_{il}			0.8	V	Pad 1

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 1.9 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	M2010S150
Line 2	10M0000
Line 3	M yywwvv

Legend	
yy	Year
ww	Work Week
vv	Factory code

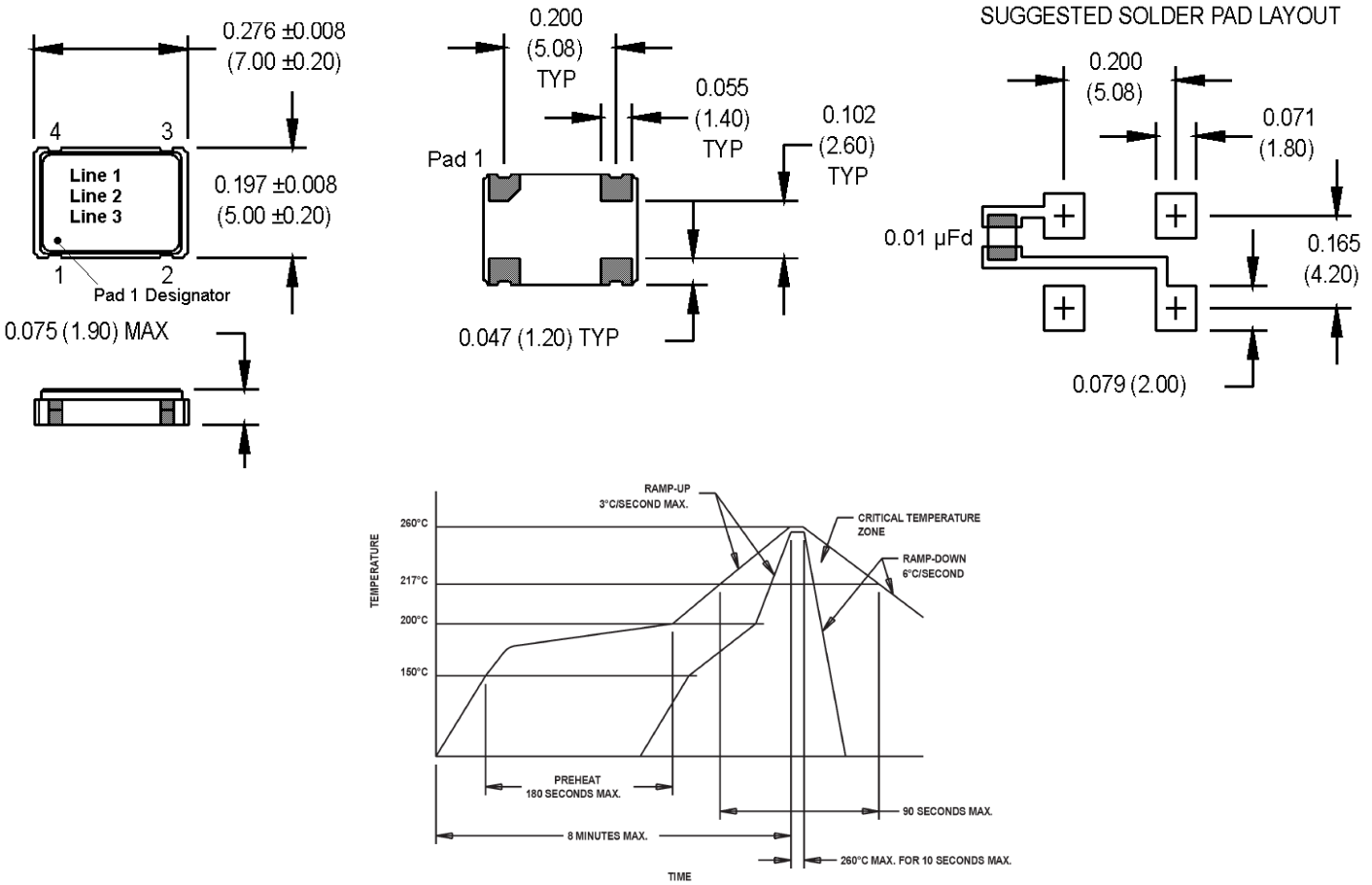

Figure 1

DATA SHEET REVISION TABLE:

Date	Rev.	Author	Details of Revision
3/24/10	0	WNJ	Original release.
5/6/10	A	WNJ	Changed Symmetry to 45/55% max. Changed Stability to +/- 50 ppm.
5/7/10	B	WNJ	Changed Stability back to +/- 70 ppm.
5/10/10	C	WNJ	Changed Tri-state Enable/Disable time to 100 ns max.
7/1/10	D	WNJ	Changed Max. Current from 55 mA to 15 mA. Updated Frequency Stability and Aging specs.
7/9/10	E	WNJ	Changed Tri-state disable voltage spec from 30% Vdd max. to 0.8 V max.
8/22/12	F	MM	Added customer part number