



SPECIFICATION FOR HCMOS/TTL COMPATIBLE SMT OSCILLATOR MtronPTI P/N M2002T166

Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F _O		16.000000		MHz	
Frequency Stability	ΔF _T /F	-50		+50	ppm	Stability Includes: (initial frequency, deviation over the operating temperature range, shift due to shock, vibration, 10 year aging, load and supply variations)
Operating Temperature	T _A	-55		+125	°C	
Storage Temperature	T _{STG}	-55		+125	°C	
Aging		-3		+3	ppm	1 st year
		-2		+2	ppm	Thereafter (per year)
Operating Voltage	V _{DD}	3.0	3.3	3.6	V	
Operating Current	I _{DD}			10	mA	
Output Type		HCMOS/TTL Compatible				
Output Load				15/2	pF/TTL	
Symmetry (duty cycle)	t _{DC}	45		55	%	Ref to ½ V _{DD}
Logic "1" Level	V _{OH}	90			% V _{DD}	HCMOS load
	V _{OH}	V _{DD} - 0.5			V	TTL Load
Logic "0" Level	V _{OL}			10	% V _{DD}	HCMOS load
	V _{OL}			0.5	V	TTL Load
Rise/Fall Time	t _R /t _F			6	ns	From 10% to 90% V _{DD}
Random Jitter	R _J		4	10	ps RMS	1-Sigma
Start-up Time	t _{SU}			10	ms	

Environmental & Mechanical Requirements:

Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g, 6 ms duration, ½ sine wave)
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g from 10 Hz to 2000 Hz)
Thermal Cycle	Per MIL-STD-883, Method 1010, B (-55 °C to 125 °C, 15 min. dwell, 10 cycles)
Fine Leak Test	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of Helium)
Gross Leak Test	Per MIL-STD-202, Method 112 (30 second immersion)
Solderability	Per EIAJ-STD-002
Max. Soldering Conditions	See solder profile, Figure 1
Package Type	4-pad 5 X 7 mm leadless ceramic. Solder tinned pads (SnPb).

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Dimensions, Marking, and Pin Out Information:

Pad	Function
1	N/C
2	Ground
3	Output
4	+V _{DD}

Part Marking	
Line 1	M2002T166
Line 2	16M0000
Line 3	M yyww

Legend	
yy	Year
ww	Work week

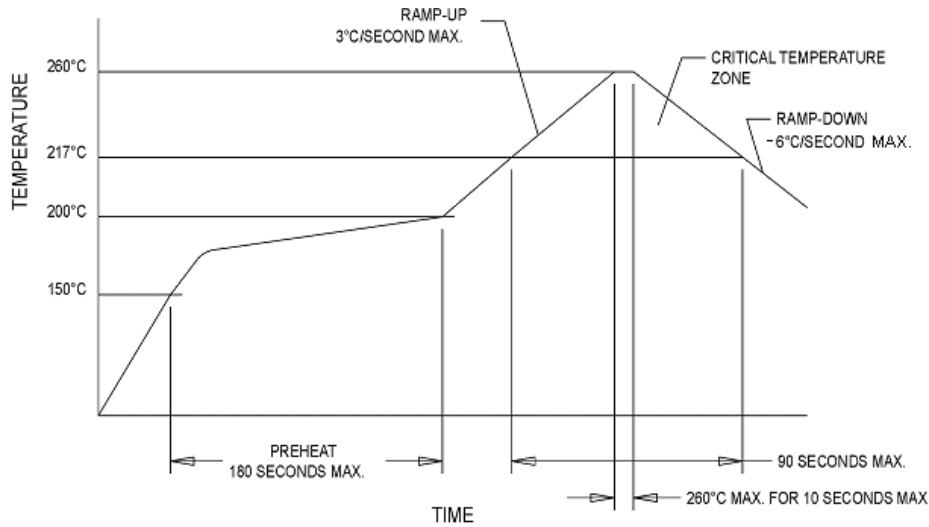
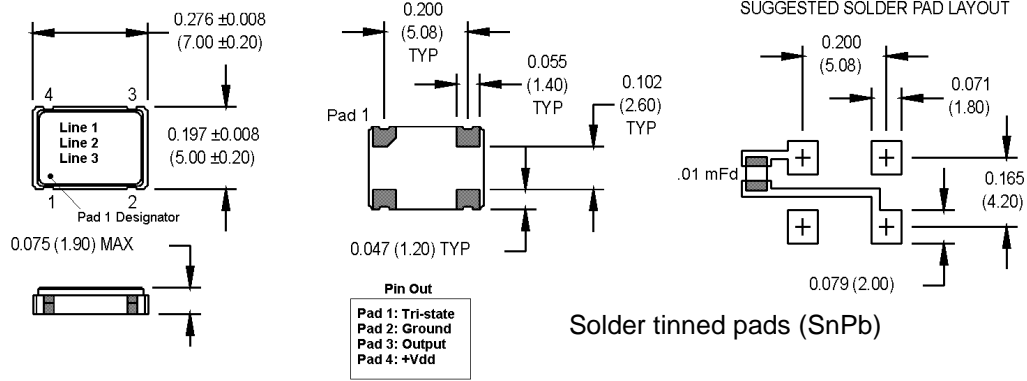


Figure 1

Data Sheet Revision Table:

Date	Rev.	Author	Details of Revision
02/13/13	0	LEO	Original release.
12/01/16	A	MM	Added customer part number.