MtronPTI ...when timing matters

1703 E. Highway 50 Yankton, SD 57078 USA
Phone: 800-762-8800 or 605-665-9321 Fax: 605-665-1709
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SPECIFICATION FOR HCMOS SMT OSCILLATOR
MtronPTI P/N M2002T273

I. General & Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F_O		20.000000		MHz	
Frequency Stability						
Frequency Stability	ΔF/F	-100		+100	ppm	Includes initial accuracy @ +25°C and deviation over operating temperature range, voltage rail tolerance and 20 years aging.
RF Output						
Output Type		HCMOS/TTL Compatible				
Output Load				15	pF	
Symmetry (duty cycle)	T_{DC}	40	50	60	%	At 50% Vdd
Logic "1" Level	V_{OH}	90% V_{DD} V_{DD} – 0.5			V	HCMOS Load TTL Load
Logic "0" Level	V_{OL}			10% V_{DD} 0.5	V	HCMOS Load TTL Load
Rise/Fall Time	T_R/T_F			8	nS	Ref. to 0.4 V to 2.8 V
Start-Up Time				5	mS	
Tristate Logic		Logic "1" or Open			V	Pad 1: Output Enabled
		Logic "0"				Pad 1: Output Disabled to high-Z
Supply Voltage & Power Consumption						
Operating Voltage	V_{DD}	3.0	3.3	3.6	V	
Operating Current	I_{DD}		3		mA	

II. Environmental & Mechanical Requirements:

Operating Temperature	T_A	-55		+125	°C	
Storage Temperature	T_S	-55		+125	°C	
Shock Survival	Survival: 5,000 g, 0.5 ms, ½ sine					
Vibration Survival	20 g, 10 – 2000 Hz swept sine					
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10^{-8} atm cc/s of Helium)					
Solderability	Per EIAJ-STD-002					
Max. Soldering Conditions	+260°C for 10 seconds max					
Lead Finish	Hot solder dipped in accordance with MIL-38510 (63/37)					
Package Type	Per MIL-STD-1276 leadless ceramic package with (4) Gullwing Leads attached (M2 Type)					

III. Testing/Screening Requirements:

Burn-in	168 hours @ +125°C

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IV. Qualification/Process Control Requirements:

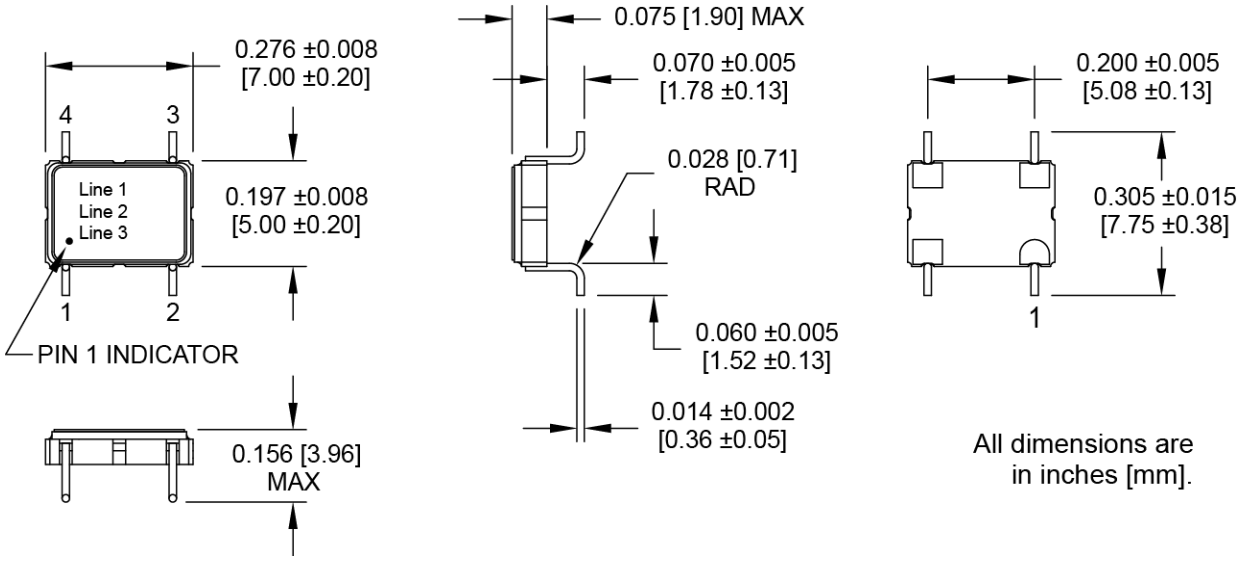
Performance Qualification	Modified oscillator package shall be capable of meeting the requirements of MIL-STD-883 Group D(package related all cases) Method 5005 subgroups 1. Physical Dimensions 2. Lead Integrity 3. Thermal Shock 4. Mechanical Shock 5. Salt Atmosphere 6. Internal Water Vapor 7. Adhesion of Lead Finish
Process Control	Manufacturer shall employ statistical process control (SPC) for each of the lead form processes. This shall include as a minimum, weekly inspection of products produced using the same equipment that us used for devices delivered to drawing 364A6204. Inspection shall consist of: 1. Solderability testing per MIL-STD-883 Method 2003. 2. Lead Integrity PER MIL-STD-883, Method 2011, Condition A

V. Dimensions, Marking, and Pin Out Information:

Pad	Function
1	Tristate
2	Ground
3	Output
4	$+V_{DD}$

Part Marking	
Line 1	M2002T273
Line 2	20M0000
Line 3	M yy ww

Legend	
yy	Year
ww	Work week



VI. Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
05/03/16	0	MM	Preliminary release
06/06/16	A	MM	Updated datasheet with burn-in and total stability requirements.
09/28/16	B	MM	Updated package type