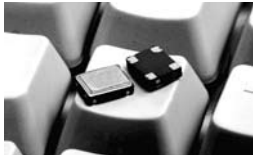


# MM Series

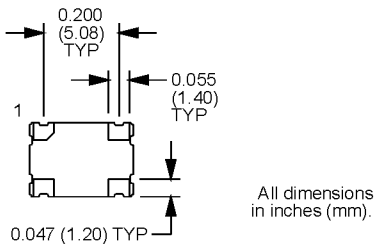
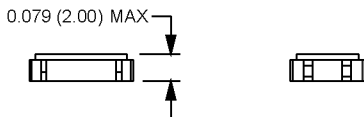
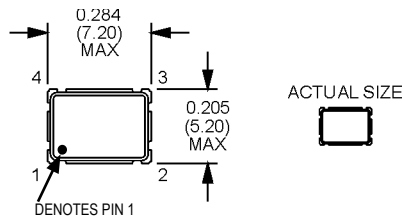
5x7 mm, 5 Volt, HCMOS/TTL, Surface Mount Oscillator



**THIS PRODUCT IS NOT RECOMMENDED FOR NEW DESIGNS.  
PLEASE REFER TO THE M1 PRODUCT SERIES.**

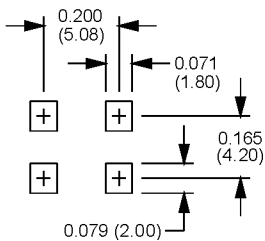


- AT-strip crystal in a miniature ceramic surface mount package.
- TTL and HCMOS compatible
- Tri-state output is optional



All dimensions in inches (mm).

## SUGGESTED SOLDER PAD LAYOUT



**NOTE:** A capacitor of value 0.01  $\mu$ F or greater between Vdd and Ground is recommended.

PIN	FUNCTION
1	N/C or Tri-state
2	Ground
3	Output
4	+Vdd

## Tri-state Control Logic

Pin 1 high or floating: clock signal output.  
Pin 1 low: output disabled to high impedance.

## Ordering Information

Product Series	MM	1	3	T	A	N	00.0000 MHz
Temperature Range	1: 0°C to +70°C	2: -40°C to +85°C					
Stability	3: $\pm 100$ ppm	4: $\pm 50$ ppm					
	5: $\pm 35$ ppm	6: $\pm 25$ ppm					
8: $\pm 20$ ppm							
Output Type	F: Fixed	T: Tristate					
Symmetry/Logic Compatibility	A: 40/60 HCMOS/TTL (Up to 50.000 MHz)						
	C: 45/55 HCMOS						
	G: 40/60 HCMOS (50.001 to 67.000 MHz)						
Package/Lead Configurations	N: Leadless						
Frequency (customer specified)							

## Electrical Specifications

Standard Operating Conditions • 0°C to +70°C; Vdd = 5.0  $\pm$  10% VDC

Storage Temperature • -55°C to +125°C

	A SYMMETRY/LOGIC				
	TTL Load		HCMOS Load		
PARAMETERS	MIN.	MAX.	MIN.	MAX.	UNITS
Frequency Range <sup>1</sup>	1.500	50.000	1.500	50.000	MHz
Output Load <sup>2</sup>		10		50	TTL/pF
Symmetry <sup>3</sup>	40/60	60/40	40/60	60/40	%
Logic “0” Level		0.5		10% Vdd	V
Logic “1” Level	Vdd-0.5		90% Vdd		V
Rise/Fall Time <sup>4</sup>		6		10	ns
Supply Current					
1.500 to 15.000 MHz		20		25	mA
15.001 to 32.000 MHz		25		30	mA
32.001 to 50.000 Mhz		40		45	mA
	G SYMMETRY/LOGIC				
Frequency Range <sup>1</sup>			50.001	67.000	MHz
Output Load <sup>2</sup>				50	pF
Symmetry <sup>3</sup>			40/60	60/40	%
Logic “0” Level				10% Vdd	V
Logic “1” Level			90% Vdd		V
Rise/Fall Time <sup>4</sup>				10	ns
Supply Current				60	mA

<sup>1</sup> Because this product is based on AT-strip technology, not all frequencies in the range stated are available. Contact the factory for availability of specific frequencies.

<sup>2</sup> TTL load - See load circuit diagram #1. HCMOS load - See load circuit diagram #2.

<sup>3</sup> Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.

<sup>4</sup> Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS load.

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice. No liability is assumed as a result of their use or application.

Please see [www.mtronpti.com](http://www.mtronpti.com) for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

## MtronPTI Lead Free Solder Profile

