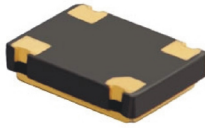


# M2 Series

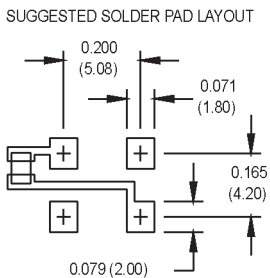
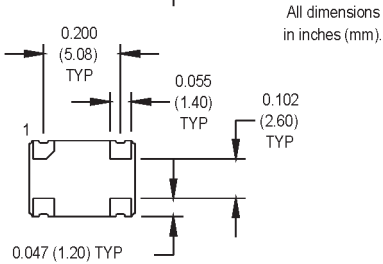
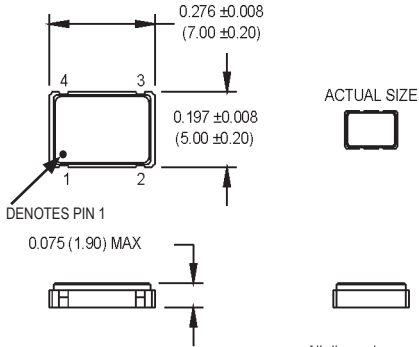
5x7 mm, 3.3 Volt, HCMOS/TTL Compatible Output, Clock Oscillator



## Ordering Information

Product Series	M2	1	3	T	C	N	00.0000	MHz
Temperature Range	1: 0°C to +70°C	2: -40°C to +85°C	3: -55°C to +105°C	4: -55°C to +125°C*	5: -10°C to +125°C	6: -20°C to +70°C	7: 0°C to +85°C	
Stability	3: ±100 ppm	4: ±50 ppm	5: ±35 ppm	6: ±25 ppm	*8: ±20 ppm			
Output Type	F: Fixed	Q: Standby Function	T: Tristate					
Symmetry/Logic Compatibility	A or G: 40/60 @ 50% Vdd**	C: 45/55 HCMOS						
Package/Lead Configurations	N: Leadless Ceramic							
Frequency (customer specified)								

\*Contact Factory for Availability  
 \*\* A and G codes are used interchangeably on the M2 Series  
 M2002Sxxx - Contact factory for datasheet



**NOTE:** A capacitor of value 0.01 µF or greater between Vdd and Ground is recommended.

## Pin Connections

PIN	FUNCTION
1	N/C or Tristate
2	Ground
3	Output
4	+Vdd

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	1.5		135	MHz	See Note 1
Operating Temperature	T <sub>A</sub>	(See ordering information)				
Storage Temperature	T <sub>S</sub>	-55		+125	°C	
Frequency Stability	ΔF/F	(See ordering information)				
Aging			±3		ppm	
1 <sup>st</sup> Year			±2		ppm	
Thereafter (per year)						
Input Voltage	V <sub>dd</sub>	3.0	3.3	3.6	V	
Input Current	I <sub>dd</sub>			10	mA	1.500 to 20.000 MHz
				20	mA	20.001 to 50.000 MHz
				30	mA	50.001 to 67.000 MHz
				55	mA	67.001 to 135.000 MHz
Standby Current				10	µA	"Q" Output Type
Output Type						HCMOS/TTL Compatible
Load		2 TTL or 15 pF				See Note 2
Symmetry (Duty Cycle)		(See ordering information)				½ V <sub>dd</sub>
Logic "1" Level	V <sub>oh</sub>	90% V <sub>dd</sub>			V	HCMOS Load
		V <sub>dd</sub> -0.5			V	TTL Load
Logic "0" Level	V <sub>ol</sub>			10% V <sub>dd</sub>	V	HCMOS Load
				0.5	V	TTL Load
Output Current				±4	mA	
Rise/Fall Time	T <sub>r</sub> /T <sub>f</sub>			6	ns	See Note 3
				4	ns	1.500 to 50.000 MHz
				2	ns	50.001 to 80.000 MHz
Standby/Tristate Function		Input Logic "1" or floating; output active				
		Input Logic "0"; output disables to high-Z				
Start up Time				10	ms	
Random Jitter	R <sub>j</sub>		4	10	ps RMS	1-Sigma
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)				
Hermeticity		Per MIL-STD-202, Method 112, (1x10 <sup>-8</sup> atm. cc/s of Helium)				
Thermal Cycle		Per MIL-STD-883, Method 1010, Condition B (-55°C to +125°C, 15 min. dwell, 10 cycles)				
Solderability		Per EIAJ-STD-002				
Soldering Conditions		See solder profile, Figure 1				

1. Consult factory for availability of higher frequencies.
2. HCMOS Load - See Load circuit diagram #2. Consult factory with nonstandard output load requirements.
3. Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% V<sub>dd</sub> and 90% V<sub>dd</sub> with HCMOS load.

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# MtronPTI Lead Free Solder Profile

