

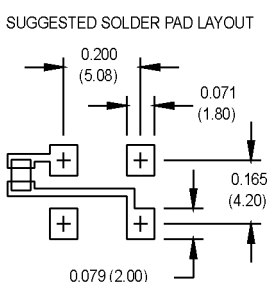
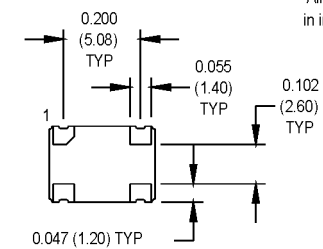
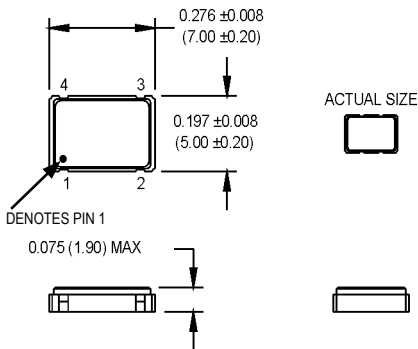
# M2 Series

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							
Frequency (customer specified)								



**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 1 <sup>st</sup> Year			±3		ppm		
Thereafter (per year)			±2		ppm		
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			5		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		+260°C max. for 10 secs.					

1. Consult factory for availability of higher frequencies.
2. 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.

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

