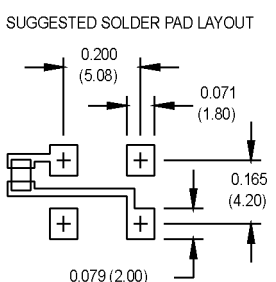
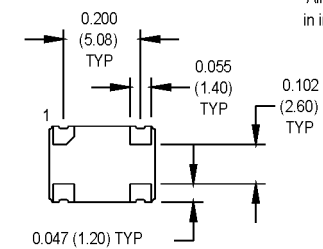
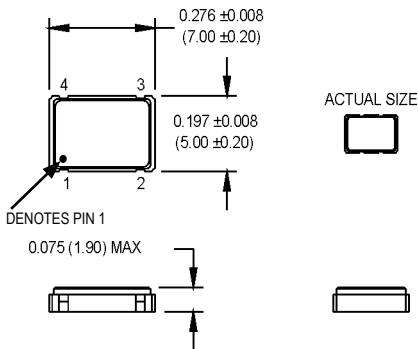


# M2 Series

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



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

## Pin Connections

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

### 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:  $\pm$ 100 ppm    4:  $\pm$ 50 ppm  
 5:  $\pm$ 35 ppm    6:  $\pm$ 25 ppm  
 \*8:  $\pm$ 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)**

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

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	1.5		135	MHz	See Note 1
Operating Temperature	Ta	(See ordering information)				
Storage Temperature	Ts	-55		+125	°C	
Frequency Stability	$\Delta$ F/F	(See ordering information)				
Aging 1 <sup>st</sup> Year			$\pm$ 3		ppm	
Thereafter (per year)			$\pm$ 2		ppm	
Input Voltage	Vdd	3.0	3.3	3.6	V	
Input Current	Idd			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	$\mu$ A	"Q" Output Type
Output Type						HCMOS/TTL Compatible
Load		2 TTL or 15 pF				See Note 2
Symmetry (Duty Cycle)		(See ordering information)				1/2 Vdd
Logic "1" Level	Voh	90% Vdd			V	HCMOS Load
		Vdd -0.5			V	TTL Load
Logic "0" Level	Vol			10% Vdd	V	HCMOS Load
				0.5	V	TTL Load
Output Current				$\pm$ 4	mA	
Rise/Fall Time	Tr/Tf			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	Rj		4	10	ps RMS	1-Sigma
Mechanical Shock		Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, 1/2 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% Vdd and 90% Vdd with HCMOS load.

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# MtronPTI Lead Free Solder Profile

