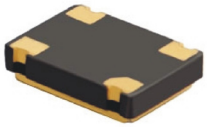
M1 Series

5x7 mm, 5.0 Volt, HCMOS/TTL, Clock Oscillator



RoHS Compliant

Ordering Information

00.0000 MHz

M1 1 3 F A N

Product Series

Temperature Range
- 1: 0°C to +70°C
- 2: -40°C to +85°C
- 4: -55°C to +125°C
- 6: -20°C to +70°C

Stability
- 3: ±100 ppm
- 4: ±50 ppm
- 5: ±35 ppm
- 6: ±25 ppm
- *8: ±20 ppm

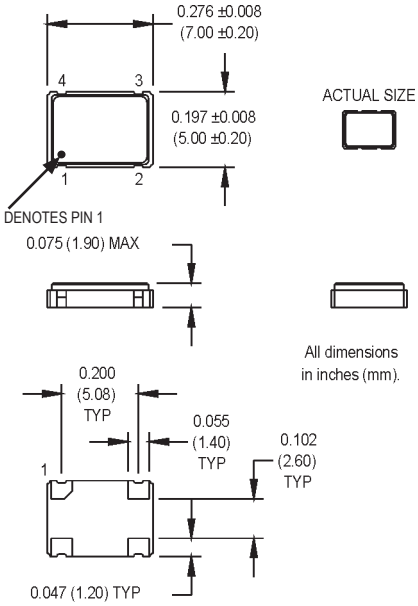
Output Type
- F: Fixed
- T: Tristate

Symmetry/Logic Compatibility
- A: 40/60 TTL/HCMOS (50.000 MHz and below)
- C: 45/55 HCMOS
- G: 40/60 HCMOS (50.001 to 100.000 MHz)

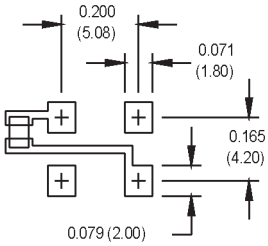
Package/Lead Configurations
- N: Leadless Ceramic

Frequency (customer specified)

*Contact Factory for Availability
M2010Sxxx - Contact factory for datasheet.



SUGGESTED SOLDER PAD LAYOUT



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
Electrical Specifications	Frequency Range	F	1.5		100	MHz	
	Operating Temperature	T_A	(See ordering information)				
	Storage Temperature	T_S	-55		+125	°C	
	Frequency Stability	ÄF/F	(See ordering information)				
	Aging						
	1st Year			3		ppm	
	Thereafter (per year)			2		ppm	
	Input Voltage	Vdd	4.5	5.0	5.5	V	
	Input Current	Idd					
	1.500 to 20 MHz				20	mA	
	20.001 to 50 MHz				35/45	mA	TTL/HCMOS
	50.001 to 100 MHz				65	mA	
	Output Type						HCMOS/TTL
	Load						See Note 1
	1.500 to 50 MHz		10 TTL or 50 pF				
	50.001 to 67 MHz		50 pF Max				
	67.001 to 100 MHz		15 pF Max				
	Symmetry (Duty Cycle)		(See ordering information)				See Note 2
	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				±16	mA	
	Rise/Fall Time	Tr/Tf					See Note 3
	1.500 to 67 MHz				10	ns	
	67.001 to 125 MHz				3	ns	
	Tristate Function		Input Logic "1" or floating; output active Input Logic "0"; output disables to high-Z				
	Start up Time				10	ms	
	Random Jitter	Rj		5	12	ps RMS	1-Sigma

Environmental	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, (1x10-8 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
	Max Soldering Conditions	See solder profile, Figure 1

1. TTL load - See load circuit diagram #1. HCMOS load - See load circuit diagram #2.
2. Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.
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

MtronPTI Lead Free Solder Profile