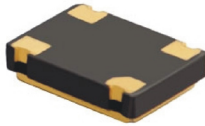


M2 Series

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



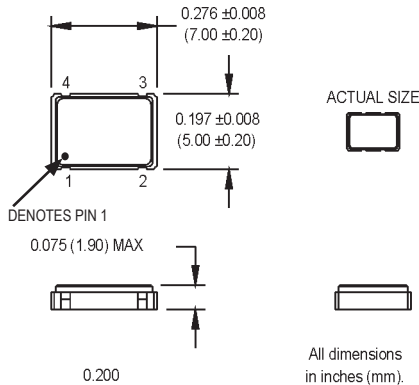
Ordering Information

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% V _{dd} ** C: 45/55 HCMOS						
Package/Lead Configurations	N: Leadless Ceramic						
Frequency (customer specified)							

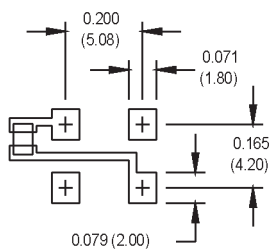
*Contact Factory for Availability

** A and G codes are used interchangeably on the M2 Series

M2002Sxxx - Contact factory for datasheet



SUGGESTED SOLDER PAD LAYOUT



NOTE: A capacitor of value 0.01 µF or greater between V_{dd} and Ground is recommended.

Pin Connections

PIN	FUNCTION
1	N/C or Tristate
2	Ground
3	Output
4	+V _{dd}

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	1.5		135	MHz	See Note 1
Operating Temperature	T _A	(See ordering information)				
Storage Temperature	T _S	-55		+125	°C	
Frequency Stability	ΔF/F	(See ordering information)				
Aging 1 st Year			±3		ppm	
Thereafter (per year)			±2		ppm	
Input Voltage	V _{dd}	3.0	3.3	3.6	V	
Input Current	I _{dd}			10 20 30 55	mA	1.500 to 20.000 MHz 20.001 to 50.000 MHz 50.001 to 67.000 MHz 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 _{dd}
Logic "1" Level	V _{oh}	90% V _{dd}			V	HCMOS Load
		V _{dd} -0.5			V	TTL Load
Logic "0" Level	V _{ol}			10% V _{dd}	V	HCMOS Load
				0.5	V	TTL Load
Output Current				±4	mA	
Rise/Fall Time	Tr/Tf			6 4 2	ns	See Note 3 1.500 to 50.000 MHz 50.001 to 80.000 MHz 80.001 to 135.000 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 _j		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 ⁻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					
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_{dd} and 90% V_{dd} 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 for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

MtronPTI Lead Free Solder Profile

