

M3H & MH Series

8 pin DIP, 3.3 or 5.0 Volt, HCMOS/TTL Clock Oscillator



- Standard 8 DIP Package
- 3.3 or 5.0 Volt Versions
- RoHS Compliant Version available (-R)
- Low Jitter
- Tristate Option
- Wide Operating Temperature Range

Ordering Information

00.0000
MHz

M3H / MH 1 3 F A D -R

Product Series _____
M3H = 3.3 Volt
MH = 5.0 Volt

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 +85°C 6: -20°C to +70°C
7: 0°C to +85°C

Stability _____
1: ±1000 ppm 2: ±500 ppm
3: ±100 ppm 4: ±50 ppm
5: ±35 ppm 6: ±25 ppm
*8: ±20 ppm

Output Type _____
F: Fixed T: Tristate

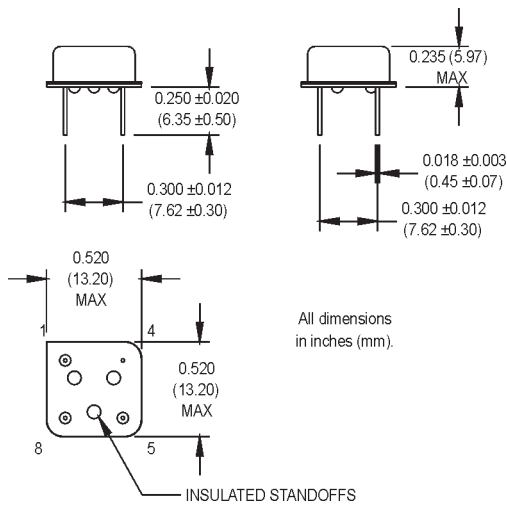
Symmetry/Logic Compatibility _____
A: 40/60 HCMOS/TTL B: 45/55 TTL (MH series only)
C: 45/55 HCMOS D: 45/55 HCMOS/TTL (MH to 50 MHz only)

Package/Lead Configurations _____
D: DIP; Nickel Header G: Gull Wing; Nickel Header

RoHS Compliance _____
Blank: non-RoHS compliant part
-R: RoHS compliant part

Frequency (customer specified) _____

*Contact factory for availability
M2004Sxxx & M2006Sxxx - Contact factory for datasheet.



Pin Connections

| PIN | FUNCTION |
|-----|---------------------|
| 1 | N/C or Tristate |
| 4 | Circuit/Case Ground |
| 5 | Output |
| 8 | +Vdd |

| PARAMETER | Symbol | Min. | Typ. | Max. | Units | Condition/Notes |
|-----------------------|--------------------------------|--|------|---------------------|--------|-----------------------|
| Frequency Range | F | 1.5 | | 100 | MHz | M3H |
| | | 1.0 | | 80 | MHz | MH |
| Operating Temperature | T _A | (See ordering information) | | | | |
| Storage Temperature | T _S | -55 | | +125 | °C | |
| Frequency Stability | ΔF/F | (See ordering information) | | | | |
| Aging | | | ±3 | | ppm | |
| 1st Year | | | ±2 | | ppm | |
| Thereafter (per year) | | | | | | |
| Input Voltage | V _{dd} | 3.135 | 3.3 | 3.465 | V | M3H |
| | | 4.5 | 5.0 | 5.5 | V | MH |
| Input Current (M3H) | I _{dd} | | | 25 | mA | 1.5000 to 50.000 MHz |
| | | | | 35 | mA | 50.001 to 67.000 MHz |
| | | | | 55 | mA | 67.001 to 100.000 MHz |
| Input Current (MH) | I _{dd} | | | 40 | mA | 1.000 to 40.000 MHz |
| | | | | 60 | mA | 40.001 to 80.000 MHz |
| Output Type | | | | | | HCMOS/TTL |
| Load | | 2 TTL or 15 pF | | | | M3H |
| | | 10 TTL or 50 pF | | | | MH |
| | | | | | | See Note 2 |
| Symmetry (Duty Cycle) | | (See ordering information) | | | | |
| 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 | M3H |
| | | | | ±16 | mA | MH |
| Rise/Fall Time | T _r /T _f | | | 10 | ns | See Note 4 |
| 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 | | 5 | 12 | ps RMS | 1-Sigma |
| Environmental | Mechanical Shock | MIL-STD-202, Method 213, C (100 g's) | | | | |
| | Vibration | MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz) | | | | |
| | Thermal Cycle | MIL-STD-883, Method 1010, B (-55°C to +125°C, 15 min dwell, 10 cycles) | | | | |
| | Hermeticity | MIL-STD-202, Method 112 | | | | |
| | Solderability | Per EIAJ-STD-002 | | | | |
| | Max Wave Soldering Conditions | +260°C for 10 seconds | | | | |

1. Contact the factory for availability of higher frequencies.
2. TTL load - see Load Circuit Diagram #1. HCMOS load - see Load Circuit Diagram #2.
3. Symmetry is measured at 1.4 V with TTL load and at 50% V_{dd} with HCMOS load.
4. Rise/fall times are measured between 0.4 V and 2.4 V with TTL load, and between 10% V_{dd} and 90% V_{dd} with HCMOS Load.

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