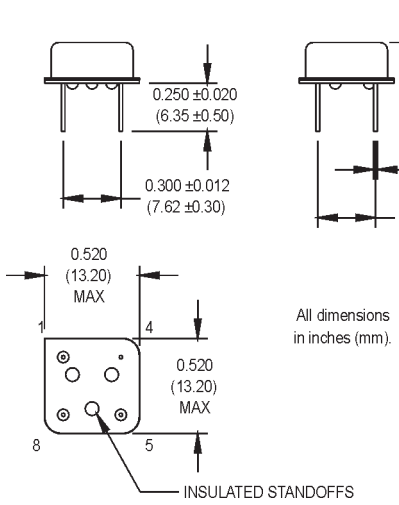
# M3H & MH Series

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

OBSOLETE

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




All dimensions in inches (mm).

### Pin Connections

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

### Ordering Information

M3H / MH — 1 — 3 — F — A — D — -R — 00.0000 MHz

- t Se
  - = 3.
  - 5.0
- Temperature Range
  - 0°C
  - 2:
  - 3: -55
  - 4:
  - 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.

| | PARAMETER | Symbol | Min. | Typ. | Max. | Units | Condition/Notes |
|---|---|---|---|---|---|---|---|
| Electrical Specifications | Frequency Range | F | 1.5<br>1.0 | | 100<br>80 | MHz<br>MHz | M3H<br>MH See Note 1 |
| | Operating Temperature | TA | (See ordering information) | | | | |
| | Storage Temperature | TS | -55 | | +125 | °C | |
| | Frequency Stability | ΔF/F | (See ordering information) | | | | |
| | Aging<br>1st Year<br>Thereafter (per year) | | | <br>±3<br>±2 | | <br>ppm<br>ppm | |
| | Input Voltage | Vdd | 3.135<br>4.5 | 3.3<br>5.0 | 3.465<br>5.5 | V<br>V | M3H<br>MH |
| | Input Current (M3H) | Idd | | | 25<br>35<br>55 | mA<br>mA<br>mA | 1.5000 to 50.000 MHz<br>50.001 to 67.000 MHz<br>67.001 to 100.000 MHz |
| | Input Current (MH) | Idd | | | 40<br>60 | mA<br>mA | 1.000 to 40.000 MHz<br>40.001 to 80.000 MHz |
| | Output Type | | | | | | HCMOS/TTL |
| | Load | | 2 TTL or 15 pF<br>10 TTL or 50 pF | | | | M3H<br>MH See Note 2 |
| | Symmetry (Duty Cycle) | | (See ordering information) | | | | See Note 3 |
| | Logic "1" Level | Voh | 90% Vdd<br>Vdd-0.5 | | | V<br>V | HCMOS Load<br>TTL Load |
| | Logic "0" Level | Vol | | | 10% Vdd<br>0.5 | V<br>V | HCMOS Load<br>TTL Load |
| | Output Current | | | | ±4<br>±16 | mA<br>mA | M3H<br>MH |
| | Rise/Fall Time | Tr/Tf | | | 10 | ns | See Note 4 |
| | Tristate Function | | Input Logic "1" or floating: output active<br>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 | | 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% Vdd with HCMOS load.
4. Rise/fall times are measured between 0.4 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS Load.