

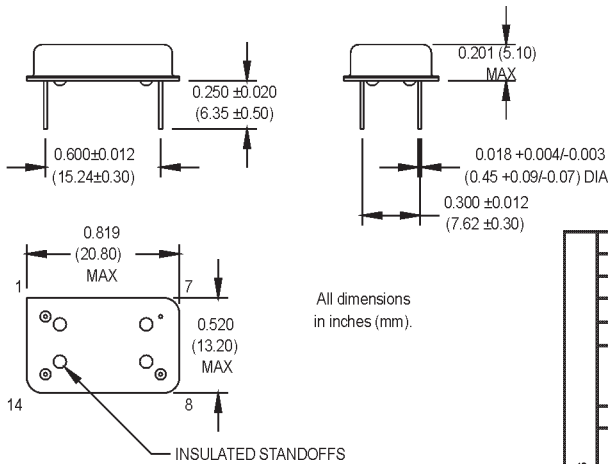
MHO+ Series

14 pin DIP, 5.0 Volt, HCMOS/TTL, Clock Oscillator



Features:

- Standard 14 DIP Package
- RoHS Compliant Version Available (-R)
- Tristate Option
- Wide Operating Temperature Range



Pin Connections

| PIN | FUNCTION |
|-----|---------------------|
| 1 | N/C or Tristate |
| 7 | Circuit/Case Ground |
| 8 | Output |
| 14 | +Vdd |

Available Symmetry

| FREQUENCY RANGE | STD. | OPTIONS |
|---------------------|------|---------|
| 0.732 kHz to 50 MHz | A | B, C, D |
| 50.001 to 60 MHz | A | B, C |
| 60.001 to 67 MHz | A | C |
| 67.001 to 80 MHz | F,G | C |

Ordering Information

| Product Series | MHO+ | 1 | 3 | F | A | D | -R | 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 +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 | 7: +0/-200 ppm | *8: ±20 ppm |
| Output Type | | F: Fixed | T: Tristate (1.000 to 80.000 MHz) | | | | | | |
| Symmetry/Logic Compatibility (See Table Below) | | A: 40/60 HCMOS/TTL | B: 45/55 TTL | C: 45/55 HCMOS | D: 45/55 HCMOS/TTL | F: 40/60 TTL | G: 40/60 HCMOS | | |
| 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
M2014Sxxx - Contact factory for datasheet.

| PARAMETER | Symbol | Min. | Typ. | Max. | Units | Condition/Notes |
|-------------------------------|--------------------------------|--|------|---------------------|--------|-----------------------|
| Frequency Range | F | .732 kHz | | 80 | 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 | | | ±3 | | ppm | |
| 1st Year | | | ±2 | | ppm | |
| Thereafter (per year) | | | | | | |
| Input Voltage | V _{dd} | 4.5 | 5.0 | 5.5 | V | |
| Input Current | I _{dd} | | | 15 | mA | .732 kHz to 2.999 MHz |
| | | | | 25 | mA | 3.000 to 25.999 MHz |
| | | | | 60 | mA | 26.000 to 80.000 MHz |
| Output Type | | | | | | HCMOS/TTL |
| Load | | | | | | See Note 2 |
| | | | | 5 TTL or 50 pF | | .732 kHz to 2.999 MHz |
| | | | | 10 TTL or 50 pF | | 3.000 to 25.999 MHz |
| | | | | 10 TTL or 15 pF | | 26.000 to 80.000 MHz |
| 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 | | | | ±8 | mA | .732 kHz to 2.999 MHz |
| | | | | ±16 | mA | 3.000 to 80.000 MHz |
| Rise/Fall Time | T _r /T _f | | | 20 | ns | See Note 4 |
| | | | | 10 | ns | .732 kHz to 2.999 MHz |
| | | | | | | 3.000 to 25.999 MHz |
| Tristate Function | | Input Logic "1" or floating; output active | | | | |
| | | Input Logic "0": output to high-Z | | | | |
| Start up Time | | | | 10 | ms | |
| Random Jitter | R _j | | 5 | 12 | ps RMS | 1-Sigma |
| 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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