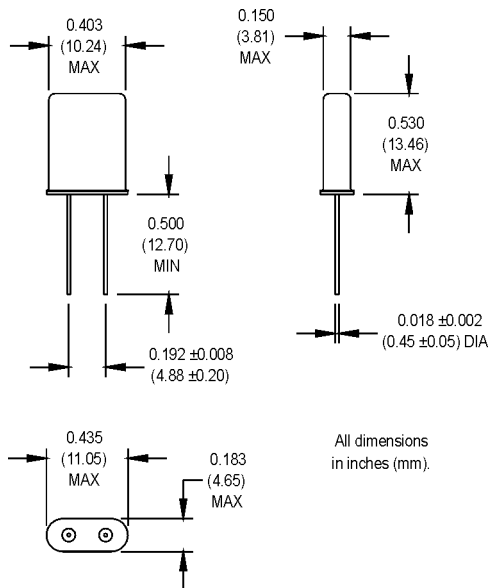


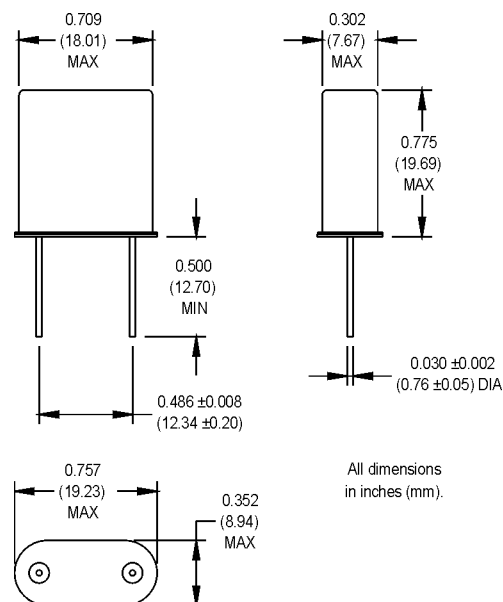
MP-1 and MP-2 Microprocessor Crystals



MP-1 (HC-49/U) 00.0000 MHz (customer specified)



MP-2 (HC-51/U) 00.0000 MHz (customer specified)



Electrical/Environmental Specifications

| PARAMETERS | MP-1*SRMP-1 | MP-2*SRMP-2 |
|--|-------------------------------|-------------------|
| Frequency Range (MHz) | 1.8432 to 200.000 | 1.8432 to 200.000 |
| Tolerance @ +25°C | ±30 ppm | ±30 ppm |
| Stability | ±50 ppm | ±50 ppm |
| Aging | ±5 ppm/yr. Max. | ±5 ppm/yr. Max. |
| Shunt Capacitance | 7 pF Max. | 7 pF Max. |
| Load Capacitance | 18 pF Std. | 18 pF Std. |
| Standard Operating Conditions | -10°C to +70°C | -10°C to +70°C |
| Equivalent Series Resistance (ESR), Max. | | |
| Fundamental (AT-cut) | | |
| 1.8432 to 1.999 MHz | 700 Ω | 300 Ω |
| 2.000 to 2.399 MHz | 600 Ω | 300 Ω |
| 2.400 to 3.299 MHz | 400 Ω | 250 Ω |
| 3.300 to 3.569 MHz | 140 Ω | 100 Ω |
| 3.570 to 3.999 MHz | 100 Ω | 100 Ω |
| 4.000 to 5.999 MHz | 75 Ω | 100 Ω |
| 6.000 to 7.999 MHz | 50 Ω | 60 Ω |
| 8.000 to 10.999 MHz | 40 Ω | 50 Ω |
| 11.000 to 14.999 MHz | 30 Ω | 40 Ω |
| 15.000 to 19.999 MHz | 25 Ω | 30 Ω |
| 20.000 to 34.000 MHz | 25 Ω | 25 Ω |
| Third Overtones (AT-cut) | | |
| 20.000 to 49.999 MHz | 40 Ω | 40 Ω |
| 50.000 to 75.000 MHz | 50 Ω | 50 Ω |
| Fifth Overtones (AT-cut) | | |
| 50.000 to 125.000 MHz | 90 Ω | 90 Ω |
| Seventh Overtones (AT-cut) | | |
| 125.000 to 200.000 MHz | 150 Ω | 150 Ω |
| Drive Level | 1 mW Max. | 1 mW Max. |
| Holder | HC-49/U | HC-51/U |
| Mechanical Shock | MIL-STD-202, Method 213, C | |
| Vibration | MIL-STD-202, Method 201 & 204 | |
| Solder Conditions | See page 147 | |
| Thermal Cycle | MIL-STD-883, Method 1010, B | |

* Series resonant designated by "SR" prefix (i.e., SRMP-1).
Refer to page 147 for third lead configuration, base insulator and sleeving options.
See Surface Mount Crystal section for HC-49/U version.

M-tron MP-1 Options (Order by part number listed followed by the desired frequency.)

| Part No. | Description |
|----------|---|
| 301-010 | Fundamental frequencies, base insulator |
| 302-000 | 3rd overtone frequencies, 20.000 to 34.000 MHz |
| 304-000 | Fundamental frequencies, 3rd lead attached |
| 305-000 | 3rd overtone frequencies, 3rd lead attached |
| 357-000 | Fundamental frequencies, 3rd lead attached, base insulator |
| 439-010 | 3rd overtone frequencies, base insulator |
| 463-000 | Fundamental frequencies, 20 pF load capacitance |
| 465-000 | Fundamental frequencies, 32 pF load capacitance |
| 490-000 | Fundamental frequencies, -20°C to +70°C operating temperature |
| 490-001 | Fundamental frequencies, -20°C to +70°C operating temperature, base insulator |
| 490-010 | Fundamental frequencies, -40°C to +85°C operating temperature |
| 490-015 | Fundamental frequencies, -40°C to +85°C operating temperature, base insulator |
| 490-025 | 3rd overtone frequencies, -40°C to +85°C operating temperature |
| 490-260 | Fundamental frequencies, ±30 ppm tolerance, ±50 ppm stability over -20°C to +70°C |

Balance of specifications same as shown in "Electrical Specifications".
Contact the factory for options not listed above.

M-tron 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. No rights under any patent accompany the sale of such product.

M-tron Industries, Inc., PO Box 630, Yankton, SD 57078-0630, USA Phone: 605-665-9321 or 1-800-762-8800 Fax: 605-665-1709 Website: www.mtron.com
M-tron Industries Limited, 1104 Shanghai Industrial Investment Building, 48-62 Hennessy Road, Wanchai, Hong Kong, China Phone: 852-2866-8023 Fax: 852-2529-1822

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