## **M4S Series**

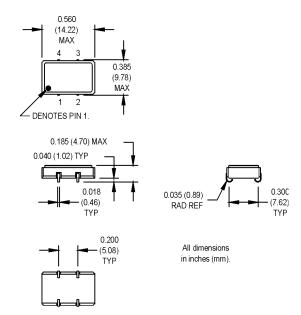
## 9x14 mm, 5.0 Volt, PECL, Clock Oscillator

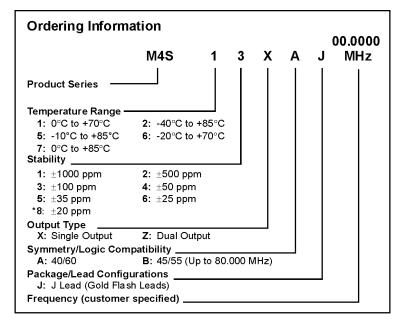






 M4S Series Ceramic J-Lead PECL Clock Oscillators with Optional Complementary Outputs, PLL Version





## **Pin Connections**

| PIN | FUNCTION(S) (Model Dependent) |  |  |  |  |
|-----|-------------------------------|--|--|--|--|
| 1   | N/C or Output #2, Q           |  |  |  |  |
| 2   | Case Ground                   |  |  |  |  |
| 3   | Output #1, Q                  |  |  |  |  |
| 4   | +Vcc                          |  |  |  |  |

| SUGGESTED | SOLDER PAD LAYOUT |
|-----------|-------------------|
| -         | 0.200 (5.08)      |
| +         | 0.050 (1.27)      |
|           | 0.346             |
| Ð         | (8.80)            |
| _         | _                 |
| H         | <b>₩</b>          |
| ت ت       | <u> </u>          |
| 0.118 (3. | <sub>00)</sub>    |

|                           | PARAMETER                | Symbol  | Min.  | Тур. | Max.      | Units  | Condition        |
|---------------------------|--------------------------|---|---|------|-----------|--------|------------------|
| Electrical Specifications | Frequency Range          | F   | 19.44   |      | 160       | MHz    |                  |
|                           | Frequency Stability      | ∆ <b>F/F</b>  | (See Ordering Information)                      |      |           |        |                  |
|                           | Operating Temperature    | TA  | (See Ordering Information)                      |      |           |        |                  |
|                           | Storage Temperature      | Ts  | -55   |      | +125      | °C     |                  |
|                           | Input Voltage            | Vcc   | 4.75  | 5.0  | 5.25      | V      |                  |
|                           | Input Current            | lee/Icc   |   | 70   | 100       | mA     |                  |
|                           | Symmetry (Duty Cycle)    |   | (See Ordering Information)                      |      |           |        | Vcc -1.3 V Level |
|                           | Load                     |   | 130 $\Omega$ to Vcc -2 V or Thevenin Equivalent |      |           |        | See Note 1       |
|                           | Rise/Fall Time           | Tr/Tf   |   |      | 2.5       | ns     | See Note 2       |
|                           | Logic "1" Level          | Voh   | Vcc -0.98                                       |      |           | ٧      |                  |
|                           | Logic "0" Level          | Vol   |   |      | Vcc -1.63 | V      |                  |
|                           | Cycle to Cycle Jitter    |   |   | 70   | 120       | ps RMS | 1 Sigma          |
| Environmental             | Mechanical Shock         | Per MIL-STD-202, Method 213, Condition C                              |   |      |           |        |                  |
|                           | Vibration                | Per MIL-STD-202, Method 201 & 204                                     |   |      |           |        |                  |
|                           | Reflow Solder Conditions | 240°C for 10 s max.   |   |      |           |        |                  |
|                           | Hermeticity              | Per MIL-STD-202, Method 112 (1 x 10 <sup>-8</sup> atm.cc/s of helium) |   |      |           |        |                  |
| Ë                         | Solderability            | Per EIAJ-STD-002  |   |      |           |        |                  |

- 1. Internally terminated outputs. See load circuit diagram #4.
- 2. Rise/Fall times are measured between Vcc-0.98 V and Vcc-1.63 V.
- 3. For applications requiring better jitter performance, please refer to the M-tron M4R series.

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