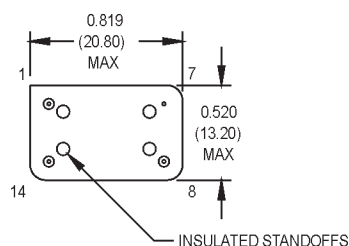
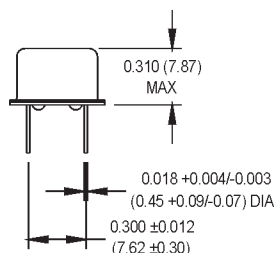
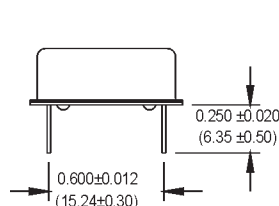


# MTXO Series

## 14 DIP, 5.0 Volt, HCMOS/TTL, TCXO



All dimensions  
in inches (mm).

\* See page 146 for surf board configuration.

### Pin Connections

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

### Ordering Information

|                                |                                                |                                     |                   |                         |           |   |             |
|--------------------------------|------------------------------------------------|-------------------------------------|-------------------|-------------------------|-----------|---|-------------|
| Product Series                 | MTXO                                           | 1                                   | H                 | V                       | A         | D | 00.0000 MHz |
| Temperature Range              | 1: 0°C to +70°C                                | 2: -40°C to +85°C                   | 6: -20°C to +70°C | 8: 0°C to +50°C         |           |   |             |
| Stability                      | E: ±10 ppm                                     | L: ±5 ppm                           | H: ±2.5 ppm       | K: ±2 ppm               | J: ±1 ppm |   |             |
| Frequency Control (Pin #1)     | *F: Fixed ("H", "L", and "E" stabilities only) | V: ±5 ppm Min. For 0 VDC to 5.0 VDC |                   |                         |           |   |             |
| Symmetry/Logic Compatibility   | A: 40/60 CMOS/TTL                              | B: 45/55 TTL (< 100.000 MHz only)   | C: 45/55 CMOS     | T: True Sinewave Output |           |   |             |
| Package/Lead Configurations    | D: DIP; Nickel Header                          | S: Surf Board                       |                   |                         |           |   |             |
| Frequency (customer specified) |                                                |                                     |                   |                         |           |   |             |

|  | Electrical Specifications   |                                                                       |                                |                    |                     |                                                                            |
|--|-----------------------------|-----------------------------------------------------------------------|--------------------------------|--------------------|---------------------|----------------------------------------------------------------------------|
|  | PARAMETER                   | Symbol                                                                | Min.                           | Typ.               | Max.                | Units Condition                                                            |
|  | Frequency Range             | F                                                                     | 0.5<br>10                      |                    | 155.52<br>33        | MHz<br>MHz<br>TTL and HCMOS<br>True Sinewave                               |
|  | Frequency Stability         | $\Delta F/F$                                                          | (See Ordering Information)     |                    |                     |                                                                            |
|  | Operating Temperature       | T <sub>A</sub>                                                        | (See Ordering Information)     |                    |                     |                                                                            |
|  | Storage Temperature         | T <sub>S</sub>                                                        | -55                            |                    | +125                | °C                                                                         |
|  | Input Voltage               | V <sub>dd</sub>                                                       | 4.75                           | 5.0                | 5.25                | VDC                                                                        |
|  | Input Current               | I <sub>dd</sub>                                                       |                                | 15<br>18<br>20     | 25<br>30<br>45      | mA<br>mA<br>mA<br>0.5 to 30 MHz<br>30.00 to 70 MHz<br>70.001 to 155.52 MHz |
|  | Symmetry <sup>1</sup>       |                                                                       | (See Ordering Information)     |                    |                     |                                                                            |
|  | Load                        |                                                                       | 5 TTL or 15 pF Max.<br>50 Ohms |                    |                     |                                                                            |
|  | Rise/Fall Time <sup>2</sup> | Tr/Tf                                                                 |                                |                    | 10<br>5             | ns<br>ns<br>0.5 to 30 MHz<br>30.001 to 155.52 MHz                          |
|  | Logic "1" Level             | V <sub>oh</sub>                                                       | 2.4<br>90                      |                    |                     | VDC<br>%<br>TTL<br>HCMOS                                                   |
|  | Logic "0" Level             | V <sub>ol</sub>                                                       |                                |                    | 10<br>0.4           | VDC<br>%<br>TTL<br>HCMOS                                                   |
|  | Cycle to Cycle Jitter       |                                                                       |                                |                    | 4.2<br>8.7<br>5.5   | ps RMS<br>ps RMS<br>ps RMS<br>1 Sigma                                      |
|  | Phase Noise (Typical)       |                                                                       | 10 Hz                          | 100 Hz             | 1 kHz               | 10 kHz                                                                     |
|  |                             |                                                                       | -78<br>-45<br>-42              | -103<br>-77<br>-66 | -136<br>-100<br>-76 | -143<br>-89<br>-80                                                         |
|  |                             |                                                                       | -146<br>-88<br>-89             |                    |                     |                                                                            |
|  | Modulation Bandwidth        | f <sub>m</sub>                                                        | 10                             |                    |                     | kHz                                                                        |
|  | Input Impedance (Pin 1)     | Z <sub>in</sub>                                                       | 100                            |                    |                     | KΩ                                                                         |
|  | Control Voltage             | V <sub>c</sub>                                                        | 0                              | 2.5                | 5.0                 | VDC                                                                        |
|  | Center Frequency            | V <sub>c0</sub>                                                       |                                | 2.5                |                     | VDC                                                                        |
|  | Pullability                 |                                                                       | 1.8                            | 3.2                | 4.5                 | ppm/V                                                                      |
|  | Deviation Slope             |                                                                       |                                |                    |                     | Negative, Monotonic                                                        |
|  | Mechanical Shock            | Per MIL-STD-202, Method 213, Condition C                              |                                |                    |                     |                                                                            |
|  | Vibration                   | Per MIL-STD-202, Method 201 & 204                                     |                                |                    |                     |                                                                            |
|  | Reflow Solder Conditions    | See Page 147                                                          |                                |                    |                     |                                                                            |
|  | Hermeticity                 | Per MIL-STD-202, Method 112 (1 x 10 <sup>-8</sup> atm.cc/s of helium) |                                |                    |                     |                                                                            |
|  | Solderability               | Per EIAJ-STD-002                                                      |                                |                    |                     |                                                                            |

1. Symmetry is measured at 1.4 V with TTL load, and at 50% V<sub>dd</sub> with HCMOS load.

2. Rise/fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% V<sub>dd</sub> and 90% V<sub>dd</sub> with HCMOS load. Output levels to +8 dBm are available. Contact factory for non-standard requirements.

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