

# MXO5040 Series

## 2x2 in., 15.0 Volt, HCMOS/Sinewave, DOCXO



- Double oven OCXO features exceptional stability and ultra low aging
- Ideal for cellular base stations, GPS timing systems, test equipment and wireless base stations

| Ordering Information           |                                                              |
|--------------------------------|--------------------------------------------------------------|
| Product Series                 | MXO5040                                                      |
| Temperature Range              | 1: 0°C to +70°C                                              |
| Stability                      | V: $\pm 5.0 \times 10^{-10}$<br>Y: $\pm 2.0 \times 10^{-10}$ |
| Crystal Cut                    | A: AT Cut<br>S: SC Cut                                       |
| Output Type                    | H: HCMOS Compatible<br>S: Sinewave                           |
| Package Type                   | D5: 5 Pin Through Hole<br>D6: 6 Pin Through Hole             |
| Frequency (Customer Specified) | 00.0000 MHz                                                  |

|   |   |   |   |
|---|---|---|---|
| T | S | V | Y |
| 1 | A | S |   |

A = AT Cut  
S = SC Cut

| PARAMETER                                              | SC-cut                                              |                 | AT-cut                                              |
|--------------------------------------------------------|-----------------------------------------------------|-----------------|-----------------------------------------------------|
|                                                        | Frequency Range                                     | 10 MHz          |                                                     |
| Temperature Range                                      | 0°C to +70°C                                        |                 | 0°C to +70°C                                        |
| Temperature Stability (referenced to 35°C)             | $\pm 2.0 \times 10^{-10}$                           |                 | $\pm 5.0 \times 10^{-10}$                           |
| Supply Voltage                                         | +15 Vdc $\pm 5\%$                                   |                 | +15 Vdc $\pm 5\%$                                   |
| Aging Over 1 Year                                      | $\pm 1.0 \times 10^{-8}$                            |                 | $\pm 3.0 \times 10^{-8}$                            |
| Aging Per Day                                          | $\pm 2.0 \times 10^{-10}$                           |                 | $\pm 5.0 \times 10^{-10}$                           |
| Current<br>@ 25°C steady state<br>@ turn on, all temps | 180 mA max<br>750 mA max                            |                 | 180 mA max<br>750 mA max                            |
| Start-up Time                                          | 5 sec max                                           |                 | 5 sec max                                           |
| Warm-up Time @ 0°C                                     | Freq. within $\pm 3.5 \times 10^{-8}$ in 20 min max |                 | Freq. Within $\pm 5.0 \times 10^{-8}$ in 20 min max |
| Input Impedance                                        | >30 k $\Omega$                                      |                 | >30 k $\Omega$                                      |
| Tuning Voltage Range                                   | 0 - 10 V                                            |                 | 0 - 10 V                                            |
| Center Frequency Voltage                               | 5 $\pm 0.5$ V                                       |                 | 5 $\pm 0.5$ V                                       |
| Frequency Tuning Range                                 | $\pm 0.25$ to $\pm 0.5 \times 10^{-6}$              |                 | $\pm 0.5$ to $\pm 1.0 \times 10^{-6}$               |
| Short Term Stability                                   | $1.0 \times 10^{-11}/\text{sec}$                    |                 | $2.0 \times 10^{-11}/\text{sec}$                    |
| Phase Noise @                                          | <b>10 MHz</b>                                       | <b>15 MHz</b>   | <b>10 MHz</b>                                       |
| 1 Hz                                                   | -90 dBc/Hz                                          | -80 dBc/Hz      | -80 dBc/Hz                                          |
| 10 Hz                                                  | -120 dBc/Hz                                         | -120 dBc/Hz     | -115 dBc/Hz                                         |
| 100 Hz                                                 | -140 dBc/Hz                                         | -130 dBc/Hz     | -135 dBc/Hz                                         |
| 1 kHz                                                  | -145 dBc/Hz                                         | -135 dBc/Hz     | -145 dBc/Hz                                         |
| 10 kHz                                                 | -150 dBc/Hz                                         | -140 dBc/Hz     | -145 dBc/Hz                                         |
| <b>Sinewave Version</b>                                |                                                     |                 |                                                     |
| Spurious & Subharmonics                                | < -85 dBc                                           | < -45 dBc       | < -85 dBc                                           |
| Harmonics                                              | < -40 dBc                                           | < -30 dBc       | < -40 dBc                                           |
| Output Level into 50 $\Omega$                          | +7 $\pm 2$ dBm                                      | +12 $\pm 1$ dBm | +7 $\pm 1$ dBm                                      |
| <b>HCMOS Version</b>                                   |                                                     |                 |                                                     |
| Duty Cycle                                             | 40/60                                               |                 | 40/60                                               |
| Load                                                   | 2 Gates                                             |                 | 2 Gates                                             |

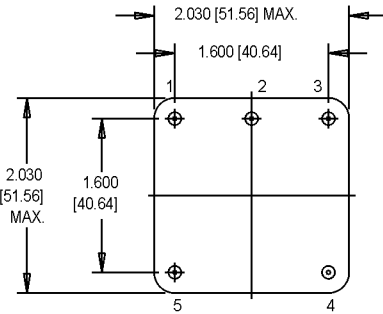
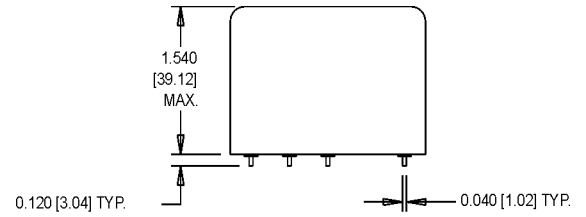
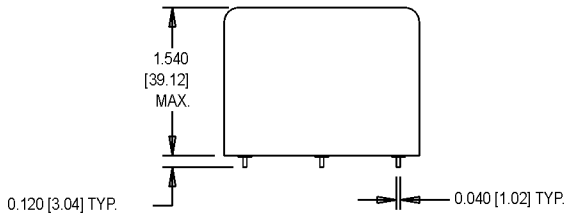
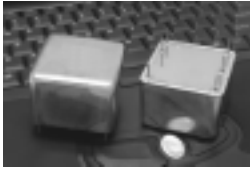
Electrical Specifications

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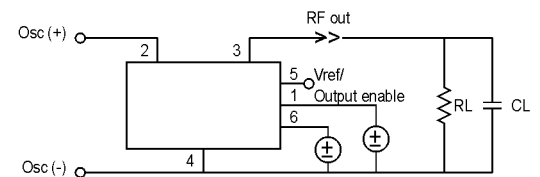
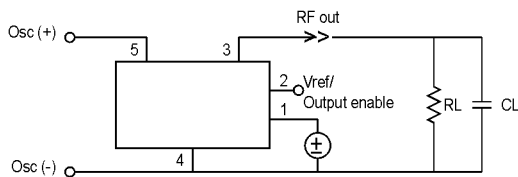
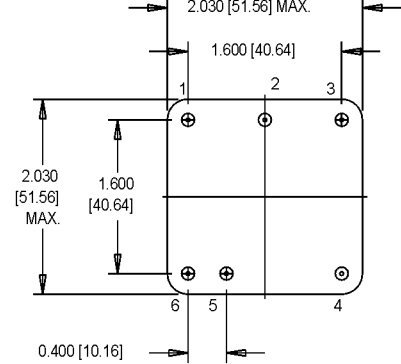
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## 2x2 in., 15.0 Volt, HCMOS/Sinewave, DOCXO



DIMENSIONS ARE SHOWN  
IN INCHES [mm].



### Pin Connections

| PIN | FUNCTION                      |
|-----|-------------------------------|
| 1   | Frequency Adjust              |
| 2   | Vref/Output Enable            |
| 3   | RF Output                     |
| 4   | Case Ground and Supply Return |
| 5   | Supply (+)                    |

### Pin Connections

| PIN | FUNCTION                      |
|-----|-------------------------------|
| 1   | Frequency Adjust (Coarse)     |
| 2   | Supply (+)                    |
| 3   | RF Output                     |
| 4   | Case Ground and Supply Return |
| 5   | Vref/Output Enable            |
| 6   | Frequency Adjust (Fine)       |

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