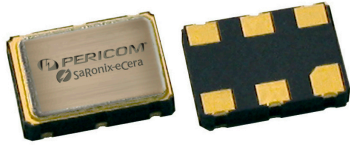


2.5V/3.3V LVPECL XO

HX702



7.0 x 5.0mm Ceramic SMD

Product Features

- Support high temperature up to 125°C
- Low phase jitter - < 1ps RMS max.
- Wide frequency range - 25 ~ 161MHz
- AEC-Q200 (Grade 1) compliant
- Pb-free & RoHS compliant

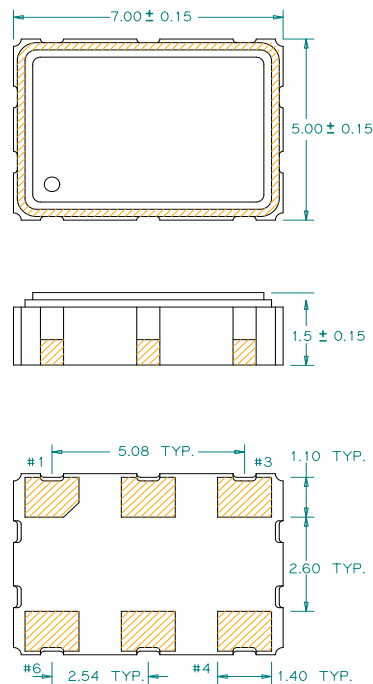
Product Description

The HX702 XO series is a high performance LVPECL crystal oscillator family that supports high temperature with very low jitter performance. It supports various options including wider frequency range, 2.5V/3.3V voltage, and various stabilities over wide temperature range. It is designed to meet the clock source specifications for communication systems, Industrial applications and other high performance equipment.

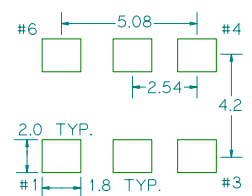
Applications

- Networking and communication systems
- Industrial and outdoor systems
- Storage and server systems
- Automotive devices
- Fanless systems in harsh environment
- Profession video equipments
- Test and measurement equipments

Package: (Scale: none; dimensions are in mm)



Recommended Land Pattern:



Pin Functions:

| Pin | Function |
|-----|-----------------|
| 1 | OE Function |
| 2 | N/C |
| 3 | Ground |
| 4 | Q |
| 5 | \bar{Q} |
| 6 | V _{CC} |

*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route RF traces beneath the package.

Part Ordering Information:

HX 702 V I FFFF.FFFFFFFF

| <p>Voltage: 1 = +3.3V 2 = +2.5V</p> | <p>Stability and Temp Range:</p> <table border="1"> <thead> <tr> <th>Stability</th> <th>Temp Range</th> </tr> </thead> <tbody> <tr> <td>A = +/-25 ppm</td> <td>-40/+90°C</td> </tr> <tr> <td>B = +/-30 ppm</td> <td>-40/+100°C</td> </tr> <tr> <td>C = +/-30 ppm</td> <td>-40/+105°C</td> </tr> <tr> <td>D = +/-50 ppm</td> <td>-40/+90°C</td> </tr> <tr> <td>E = +/-50 ppm</td> <td>-40/+100°C</td> </tr> <tr> <td>F = +/-50 ppm</td> <td>-40/+105°C</td> </tr> <tr> <td>G = +/-70 ppm</td> <td>-40/+125°C</td> </tr> <tr> <td>H = +/-100 ppm</td> <td>-40/+125°C</td> </tr> </tbody> </table> | Stability | Temp Range | A = +/-25 ppm | -40/+90°C | B = +/-30 ppm | -40/+100°C | C = +/-30 ppm | -40/+105°C | D = +/-50 ppm | -40/+90°C | E = +/-50 ppm | -40/+100°C | F = +/-50 ppm | -40/+105°C | G = +/-70 ppm | -40/+125°C | H = +/-100 ppm | -40/+125°C | <p>Frequency: FFFF.FFFFFFFF MHz, "4 digits/decimal/6 digits" format</p> |
|---|---|-----------|------------|---------------|-----------|---------------|------------|---------------|------------|---------------|-----------|---------------|------------|---------------|------------|---------------|------------|----------------|------------|---|
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| H = +/-100 ppm | -40/+125°C | | | | | | | | | | | | | | | | | | | |

Electrical Performance

| Parameter | Min. | Typ. | Max. | Units | Notes |
|--------------------------------------|---|------|------------------------|-------|--------------------------------|
| Output Frequency | 25 | | 161 | MHz | |
| Supply Voltage | 3.135 | 3.3 | 3.465 | V | See ordering options |
| | 2.375 | 2.5 | 2.625 | | |
| Supply Current, Output Enabled | | | 80 | mA | |
| Supply Current, Output Disabled only | | | 30 | uA | |
| Frequency Stability | ±25 | | ±100 | ppm | See ordering options |
| Operating Temperature Range | -40 | | +125 | °C | See ordering options |
| Output Logic 0, V _{OL} | | | V _{CC} -1.620 | V | |
| Output Logic 1, V _{OH} | V _{CC} -1.025 | | | V | |
| Output Load | 50Ω to V _{CC} -2V output termination | | | | |
| Duty Cycle | 45 | | 55 | % | Measured 50% V _{CC} |
| Rise and Fall Time | | | 850 | ps | Measured 20/80% of waveform |
| Jitter, Accumulated, RMS (1-σ) | | | 4 | ps | 20,000 adjacent periods |
| Jitter, Phase, RMS | < 40MHz | 0.5 | 1 | ps | 12kHz to 5 MHz frequency band |
| | >=40MHz | 0.5 | 1 | | 12kHz to 20 MHz frequency band |
| Jitter, pk-pk | | | 40 | ps | 100,000 random periods |

Notes:

- Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

Output Enable / Disable Function

| Parameter | Min. | Typ. | Max. | Units | Notes |
|---|---------------------|------|---------------------|-------|----------------|
| Input Voltage (pin 1), Output Enable | 0.7 V _{CC} | | | V | or open |
| Input Voltage (pin 1), Output Disable (low power standby) | | | 0.3 V _{CC} | V | Output is Hi-Z |
| Output Disable Delay | | | 200 | ns | |
| Output Enable Delay | | | 2 | ms | |
| Start up Time | | | 10 | ms | |

Absolute Maximum Ratings

| Parameter | Min. | Typ. | Max. | Units | Notes |
|---------------------|------|------|------|-------|-------|
| Storage Temperature | -55 | | +125 | °C | |

For the latest product information visit: <http://www.pericom.com/products/crystals-and-crystal-oscillators/cxo/?part=HX702>

For test circuit go to: http://www.pericom.com/pdf/sre/tc_pecl.pdf

For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr_7050_xo.pdf