

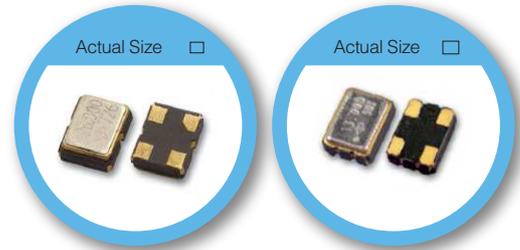
Extended Operating Temperature Range Crystal Oscillator OX/OY Series 3.2 x 2.5 / 2.5 x 2.0 mm SMD Crystal Oscillator

FEATURE

- Extended Industrial Operating Temperature Range -55°C ~ +125°C.
- Low jitter and phase noise(25ps Pk-Pk Period jitter, typical)
- Tight symmetry (45 to 55%) available.
- Operation voltage : 1.8V, 2.5V, 3.3V.
- Tri-state enable/disable.

TYPICAL APPLICATION

- Extreme environment applications.
- Oil drilling, geothermal.
- Commercial space, car/aircraft engine, aerospace & military.
- Industrial instrumentation.
- Automotive.



RoHS Compliant

DIMENSION (mm)

SOLDER PAD LAYOUT (mm)

| <p>[TOP VIEW]</p> <p>[SIDE VIEW]</p> <p>[BOTTOM VIEW]</p> <table border="1"> <thead> <tr> <th>Pin#</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tri-state</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>Output</td> </tr> <tr> <td>4</td> <td>VDD</td> </tr> </tbody> </table> | Pin# | Function | 1 | Tri-state | 2 | GND | 3 | Output | 4 | VDD | <p>To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.</p> |
|--|-----------|----------|---|-----------|---|-----|---|--------|---|-----|--|
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| 4 | VDD | | | | | | | | | | |

ELECTRICAL SPECIFICATION

| Parameter | 3.3V | | 2.5V | | 1.8V | | Unit |
|---|------|------|------|------|------|------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | |
| Supply Voltage Variation (VDD) ±10% | 2.97 | 3.63 | 2.25 | 2.75 | 1.62 | 1.98 | V |
| Frequency Range | 1.25 | 100 | 1.25 | 100 | 1.25 | 100 | MHz |
| Supply Current | | | | | | | |
| Fo ≤ 80 MHz | -- | 10 | -- | 8 | -- | 5 | mA |
| Fo > 80 MHz | -- | 15 | -- | 10 | -- | 8 | mA |
| Duty Cycle | 45 | 55 | 45 | 55 | 45 | 55 | % |
| Output Level (CMOS) | | | | | | | |
| Output High (Logic "1") | 2.97 | -- | 2.25 | -- | 1.62 | -- | V |
| Output Low (Logic "0") | -- | 0.33 | -- | 0.25 | -- | 0.18 | V |
| Transition Time: Rise/Fall Time+ | -- | 3 | -- | 4 | -- | 5 | nSec |
| Start Time | -- | 2 | -- | 2 | -- | 2 | mSec |
| Tri-State(Input to Pin 1) Enable (High voltage or floating) | 2.31 | -- | 1.75 | -- | 1.26 | -- | V |
| Disable (Low voltage or GND) | -- | 0.99 | -- | 0.75 | -- | 0.54 | V |
| Period Jitter(pk-pk) | -- | 40 | -- | 40 | -- | 40 | pSec |
| RMS Phase Jitter (integrated 12kHz ~ 20MHz) | -- | 1 | -- | 1 | -- | 1 | pSec |
| Aging (@25°C 1st year) | -- | ±3 | -- | ±3 | -- | ±3 | ppm |
| Storage Temp. Range | -55 | 125 | -55 | 125 | -55 | 125 | °C |

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position
+Transition times are measured between 10% and 90% of VDD, with an output load of 15pF

FREQ.STABILITY vs. TEMP.RANGE

| Temp. (°C) | ppm | | |
|------------|-----|-----|-----|
| | ±30 | ±40 | ±50 |
| -40~+85 | ○ | ○ | ○ |
| -40~+105 | △ | ○ | ○ |
| -40~+125 | × | △ | ○ |
| -55~+125 | × | △ | ○ |

* O: Available △: Conditional X: Not available

*Inclusive of calibration @ 25°C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

Note: not all combination of options are available. Other specifications may be available upon request.

Specifications subject to change without notice