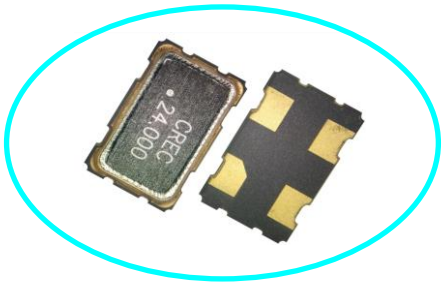
# Quartz Crsytal Oscillator Unit

## OMB Type

### SMD5032 Crystal Oscillator Series




### Feature

- ◆ Frequency Range: 0.032768~156.25MHz
- ◆ Typical 5.0 x 3.2 x 1.2 mm ceramic SMD package.
- ◆ Tri-state enable/disable.
- ◆ Packing : Tape & Reel, 1000pcs / Reel.

### Typical Application

- ◆ xDSL, WLAN, Fiber/10G-Bit Ethernet
- ◆ Notebook, PDA
- ◆ VGA card, PC main board.

## Electrical Specifications

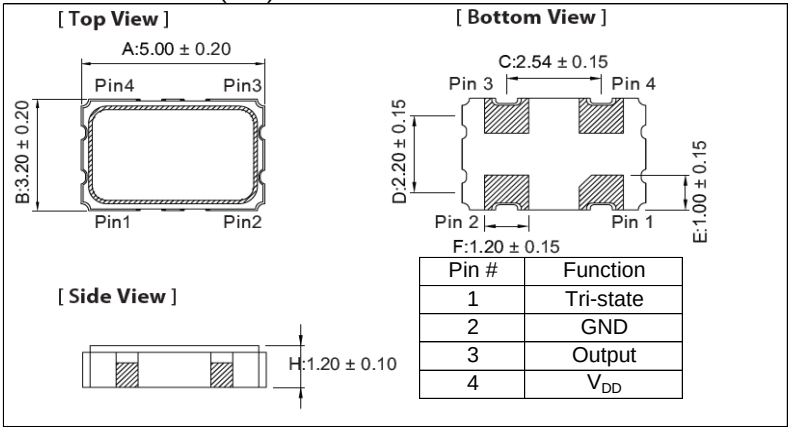
| Parameter | | Voltage | | | | | | Unit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | | 1.8V | | 2.5V | | 3.3V | | | |
| | | Min | Max | Min | Max | Min | Max | | |
| Supply Voltage Variation($V_{DD}$) | | $V_{DD}$ ± 10%$V_{DD}$ | | $V_{DD}$ ± 10%$V_{DD}$ | | $V_{DD}$ ± 10%$V_{DD}$ | | V | - |
| Frequency Range | | 0.032768 | 125 | 0.032768 | 133 | 0.032768 | 156.25 | MHz | - |
| Standard Frequency | | 2.048, 12.288, 24, 25, 26, 27, 50, 66, 66.667, 100, 125 | | | | | | MHz | - |
| Supply Current | F0≤1MHz | - | 1 | - | 1 | - | 1 | mA | Fundamental |
| | 1MHz <F0≤70MHz | - | 7 | - | 8 | - | 10 | mA | Fundamental |
| | 30MHz <F0≤70MHz | - | 15 | - | 18 | - | 20 | mA | 3rd Overtone |
| | 70MHz <F0<133MHz | - | 25 | - | 30 | - | 35 | mA | 3rd Overtone |
| | 133MHz ≤F0 | - | 35 | - | 40 | - | 45 | mA | 3rd Overtone |
| Output Level (CMOS) Output High ("1") | | 1.62 | - | 2.25 | - | 2.97 | - | V | - |
| Output Low ("0") | | - | 0.18 | - | 0.25 | - | 0.33 | V | - |
| Rise / Fall Time | F0≤1MHz | - | 50 | - | 50 | - | 50 | nSec | 10%$V_{DD}$ to 90%$V_{DD}$ Load CL:15pF |
| | 1MHz <F0<100MHz | - | 5 | - | 5 | - | 5 | nSec | |
| | 100MHz ≤F0 | - | 3 | - | 3 | - | 3 | nSec | |
| Start Time | | - | 5 | - | 5 | - | 5 | mSec | - |
| Output Drive Capability (CL) | | - | 15 | - | 15 | - | 15 | pF | - |
| Tri-State (Input to Pin 1) Enable | | 1.26 | - | 1.75 | - | 2.31 | - | V | Or Floating |
| Disable | | - | 0.54 | - | 0.75 | - | 0.99 | V | Or GND |
| Period Jitter (Pk - Pk) | | - | 40 | - | 40 | - | 40 | pSec | - |
| RMS Phase Jitter | | - | 1 | - | 1 | - | 1 | pSec | 12kHz ~20MHz |
| Standby Current | | - | 10 | - | 10 | - | 10 | uA | - |
| Aging | | -3 | 3 | -3 | 3 | -3 | 3 | ppm | @25°C 1st Year |
| Storage Temperature | | -55 | 125 | -55 | 125 | -55 | 125 | ℃ | - |

## Frequency Stability Vs. Operation Temperature Range

| ppm / Operation Temp. (°C) | ±20 | ±25 | ±50 | ±100 | Remark |
|---|---|---|---|---|---|
| -10~60 | √ | √ | √ | √ | Note 1: √:Available, △:Conditional, X:Not available<br>Note 2: Freq stability is inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration. |
| -20~70 | √ | √ | √ | √ | |
| -40~85 | X | √ | √ | √ | |
| -40~105 | X | △ | √ | √ | |
| -40~125 | X | X | △ | √ | |

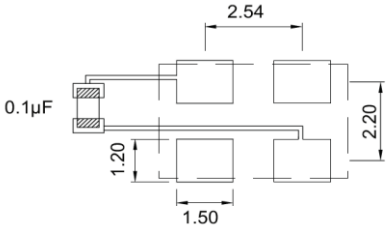
## Dimension

Product Dimension (mm)




| Pin # | Function |
|---|---|
| 1 | Tri-state |
| 2 | GND |
| 3 | Output |
| 4 | $V_{DD}$ |

Solder Pad Layout (mm)




To ensure optimal oscillator performance, place a by-pass capacitor of 0.1uF as close to the part as possible between Vdd and GND pads.

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

Specifications subject to change without notice.

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