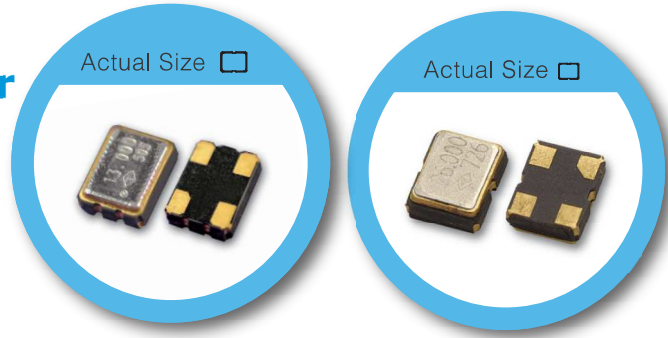




32.768kHz Series OX / OY Type 3.2 x 2.5 / 2.5 x 2.0 mm SMD Oscillator



FEATURE

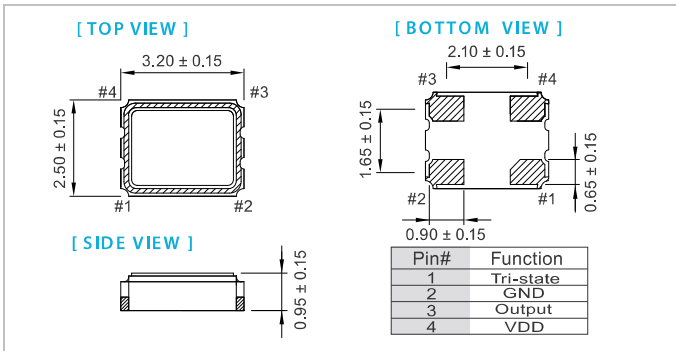
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable
- Built-in ASIC enables reduction of current consumption.

TYPICAL APPLICATION

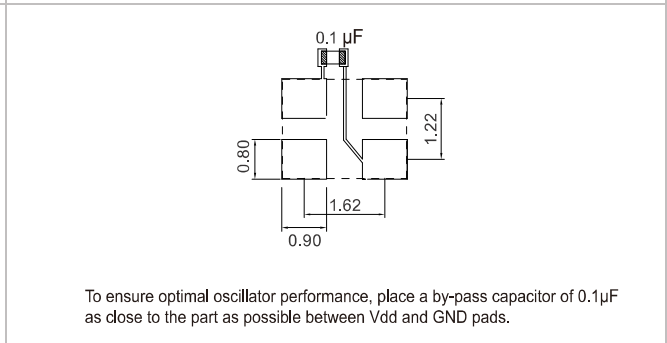
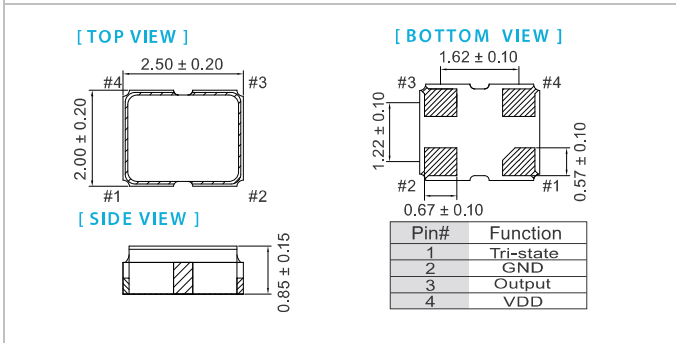
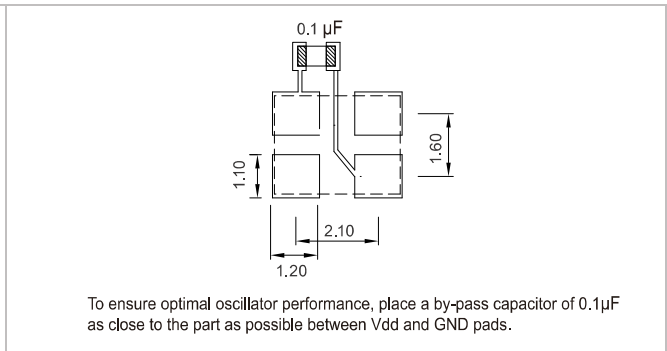
- Typically used for real time clock application.
- Mobile Phone
- DSC, Set-top Box, HDTV
- Car navigation systems.

RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



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 |
| Supply Current (@ 15pF load) | -- | 70 | -- | 66 | -- | 63 | µA |
| Supply Current (@ no load) | -- | 65 | -- | 62 | -- | 60 | µA |
| 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 | | |
| Transition Time: Rise/Fall Time+ | 50 | | 50 | | 50 | | 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 |
| Tri-State (Input to Pin 1) Disable (Low voltage or GND) | 0.99 | | 0.75 | | 0.54 | | |
| Aging (@25°C 1 st 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 | | | |
|------------|-----|-----|-----|-----|
| | ±20 | ±25 | ±40 | ±50 |
| -10~+60 | ○ | ○ | ○ | ○ |
| -20~+70 | △ | ○ | ○ | ○ |
| -40~+85 | × | △ | ○ | ○ |
| -40~+105 | × | × | ○ | ○ |
| -40~+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 load variation

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