

OX Type

3.2 x 2.5 mm SMD Ultra Low Power SMD CMOS Output Crystal Oscillator

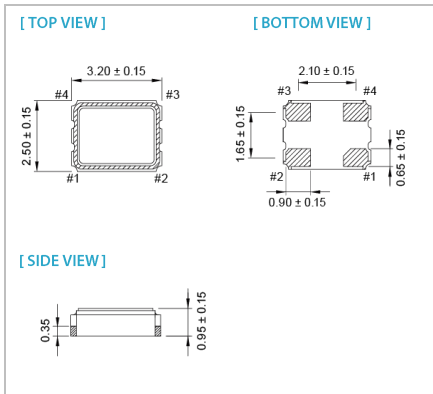
FEATURES

- Ultra Low Power Supply Voltage: 0.9V, 1.2V, 1.5V Supply Options
- Singled-end Output: CMOS
- Frequency Support from 1MHz to 50MHz
- Low Noise Typical: 0.3ps at 12kHz to 20MHz Frequency Offsets
- Temperature Range: -40 to 85°C Operation

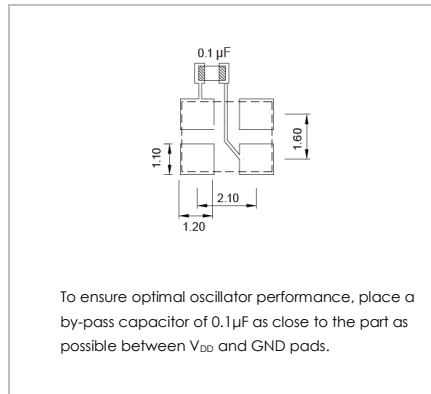
TYPICAL APPLICATION

- IoT, Smartphone, Digital Camera
- Game Console, Wearable Device, Digital Consumer Electronics

DIMENSION (mm)

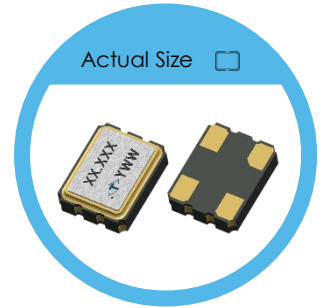


SOLDER PAD LAYOUT (mm)



PIN FUNCTION (mm)

| PIN# | FUNCTION |
|------|-----------------|
| 1 | Tri-State |
| 2 | GND |
| 3 | Output |
| 4 | V _{DD} |



RoHS Compliant

ELECTRICAL SPECIFICATION

| Parameter | 0.9V | | 1.2V | | 1.5V | | Unit | Test Condition | |
|---|---|----------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|----------------|--|
| | Min. | Max. | Min. | Max. | Min. | Max. | | | |
| Supply Voltage Variation (V _{DD}) | V _{DD} - 5% | V _{DD} + 5% | V _{DD} - 5% | V _{DD} + 5% | V _{DD} - 5% | V _{DD} + 5% | V | | |
| Frequency Range | 1 | 50 | 1 | 50 | 1 | 50 | MHz | | |
| Supply Current | At 15pF Load | | | | | | | | |
| | No Load Condition | | | | | | | | |
| | 1 MHz ≤ F _o < 10 MHz | | 1.5 | | 2 | | 3 | mA | |
| | 10 MHz ≤ F _o < 20 MHz | | 0.9 | | 1 | | 1.2 | mA | |
| 20 MHz ≤ F _o < 50 MHz | | 1 | | 1.2 | | 1.2 | mA | | |
| 20 MHz ≤ F _o < 50 MHz | | 1.2 | | 1.5 | | 1.5 | mA | | |
| Duty Cycle | 45 | 55 | 45 | 55 | 45 | 55 | % | | |
| Output Level | Output High | | 90% V _{DD} | | 90% V _{DD} | | V | | |
| | Output Low | | 10% V _{DD} | | 10% V _{DD} | | V | | |
| Transition Time: Rise/Fall Time | 1 MHz ≤ F _o < 50 MHz | | 6 | | 6 | | 6 | nSec | Transition times are measured between 10% and 90% of V _{DD} , with an output load of 15 pF. |
| Startup Time | | | 5 | | 5 | | 5 | mSec | |
| Tri-State (Input to Pin 1) | Enable (High Voltage or Floating) | | 0.7 x V _{DD} | | 0.7 x V _{DD} | | 0.7 x V _{DD} | V | |
| | Disable (Low Voltage or GND) | | 0.3 x V _{DD} | | 0.3 x V _{DD} | | 0.3 x V _{DD} | V | |
| Output Loading | 15 | | 15 | | 15 | | pF | | |
| Standby Current | 100 | | 100 | | 100 | | µA | | |
| Aging (@25°C, 1 st year) | ±3 | | ±3 | | ±3 | | ppm | | |
| Storage Temp. Range | -55 | +125 | -55 | +125 | -55 | +125 | °C | | |
| Phase Noise | At V _{DD} =1.2V, F _{out} =24MHz | | 1kHz offset | | -130 | | -133 | -135 | dBc/Hz |
| | | | 10kHz offset | | -140 | | -143 | -143 | dBc/Hz |
| | | | 100kHz offset | | -148 | | -150 | -150 | dBc/Hz |
| | | | 1MHz offset | | -152 | | -155 | -155 | dBc/Hz |
| Period Jitter (pk-pk) | - | 40 | - | 40 | - | 40 | pSec | | |
| RMS Phase Jitter (Integrated 12 kHz-20 MHz) | - | 1 | - | 1 | - | 1 | pSec | | |

FREQ. STABILITY vs. TEMP. RANGE

| Temp.(°C) | ppm | ±25 | ±50 |
|-----------|-----|-----|-----|
| -10 ~ +60 | | ○ | ○ |
| -20 ~ +70 | | ○ | ○ |
| -40 ~ +85 | | △ | ○ |

○: 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.