

# OX Type

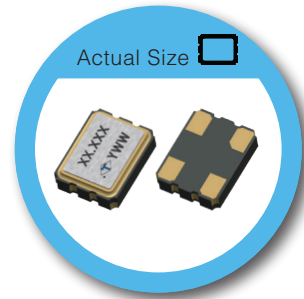
## 3.2 x 2.5 mm SMD Crystal Oscillator

### FEATURE

- Typical 3.2 x 2.5 x 0.95mm Ceramic SMD Package
- Tight Symmetry (45 to 55%) Available
- Operation Voltage: 1.8V, 2.5V, 3.3V
- Tri-State Enable/Disable

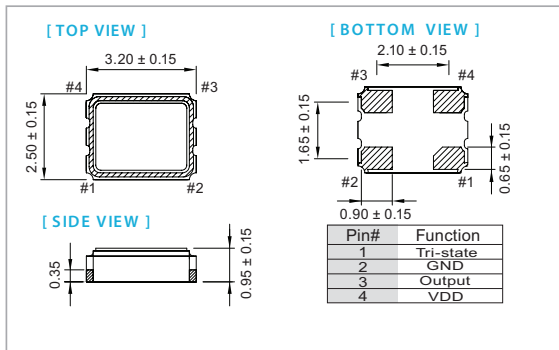
### TYPICAL APPLICATION

- WLAN/WiMAX
- Mobile Phone
- DSC, Set-Top Box, HDTV

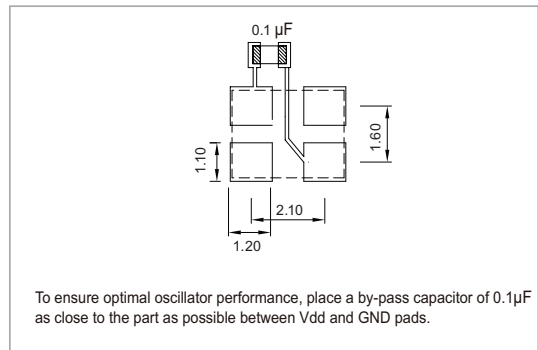


RoHS Compliant

### 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 (V <sub>DD</sub> )    | V <sub>DD</sub> -5%                     | V <sub>DD</sub> +5% | V <sub>DD</sub> -5% | V <sub>DD</sub> +5% | V <sub>DD</sub> -5% | V <sub>DD</sub> +5% | V    |      |      |
| Frequency Range                                | 1.25                                    | 125                 | 1.25                | 125                 | 1.25                | 125                 | MHz  |      |      |
| Standard Frequency                             | 24, 26, 30, 40                          |                     |                     |                     |                     |                     | MHz  |      |      |
| Supply Current                                 | At 15pF Load                            |                     | -                   | 15                  | -                   | 10                  | -    | 7    | mA   |
|  | No Load Condition, 1.25MHz ≤ Fo < 10MHz |                     | -                   | 1.5                 | -                   | 1.5                 | -    | 1.2  | mA   |
|  | No Load Condition, 10MHz ≤ Fo < 20MHz   |                     | -                   | 2                   | -                   | 2                   | -    | 1.5  | mA   |
|  | No Load Condition, 20MHz ≤ Fo < 80MHz   |                     | -                   | 3                   | -                   | 2.5                 | -    | 1.5  | mA   |
|  | No Load Condition, 80MHz ≤ Fo < 125MHz  |                     | -                   | 8                   | -                   | 7                   | -    | 5    | mA   |
| Duty Cycle                                     | 45                                      | 55                  | 45                  | 55                  | 45                  | 55                  | %    |      |      |
| Output Level                                   | Output High                             |                     | 2.97                | -                   | 2.25                | -                   | 1.62 | -    | V    |
|  | Output Low                              |                     | -                   | 0.33                | -                   | 0.25                | -    | 0.18 | V    |
| Transition Time: Rise / Fall Time <sup>+</sup> | 1.25MHz ≤ Fo < 10MHz                    |                     | -                   | 3                   | -                   | 4                   | -    | 5    | nSec |
|  | 10MHz ≤ Fo < 20MHz                      |                     | -                   | 3                   | -                   | 3                   | -    | 4    | nSec |
|  | 20MHz ≤ Fo < 80MHz                      |                     | -                   | 3                   | -                   | 3                   | -    | 4    | nSec |
|  | 80MHz ≤ Fo < 125MHz                     |                     | -                   | 3                   | -                   | 3                   | -    | 4    | nSec |
| Startup 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    |
| Output Loading                                 | 15                                      |                     | 15                  |                     | 15                  |                     | pF   |      |      |
| Stand by Current (@-40°C to 85°C)              | -                                       | 10                  | -                   | 10                  | -                   | 10                  | µA   |      |      |
| Stand by Current (@-40°C to 125°C)             | -                                       | 20                  | -                   | 20                  | -                   | 20                  | µA   |      |      |
| Period Jitter (Pk-Pk)                          | -                                       | 40                  | -                   | 40                  | -                   | 40                  | pSec |      |      |
| RMS Phase Jitter (12kHz to 20MHz)              | -                                       | 1                   | -                   | 1                   | -                   | 1                   | pSec |      |      |
| Aging (@ 25°C, 1 <sup>st</sup> 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  
<sup>+</sup>Transition times are measured between 10% and 90% of V<sub>DD</sub>, with an output load of 15pF

### FREQ. STABILITY vs. TEMP. RANGE

| Temp. (°C) | ppm |     |     |
|------------|-----|-----|-----|
|            | ±20 | ±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 (1<sup>st</sup> year), shock, and vibration load variation

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

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