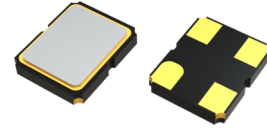


## FASTXO 2.5 × 2.0 mm SMD Crystal Oscillator

### Feature

- Typical 2.5 x 2.0 x 0.81 mm ceramic SMD package.
- Operation supply voltage: 1.8V, 2.5V and 3.3V
- FASTXO series, Fast delivery at any frequency
- Tri-State Enable/Disable
- Frequency Stability  $\pm 25$ ppm over -40 °C to 85 °C
- RoHS compliant/Pb-free



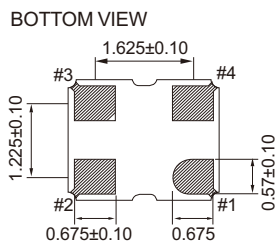
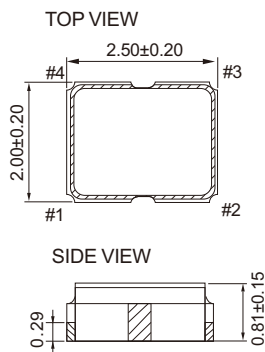
### Electrical Specifications

| Parameter                             | 3.3V               |              | 2.5V         |              | 1.8V         |              | Unit |
|---------------------------------------|--------------------|--------------|--------------|--------------|--------------|--------------|------|
|                                       | Min.               | Max.         | Min.         | Max.         | Min.         | Max.         |      |
| Supply Voltage Variation              | $V_{DD}-5\%$       | $V_{DD}+5\%$ | $V_{DD}-5\%$ | $V_{DD}+5\%$ | $V_{DD}-5\%$ | $V_{DD}+5\%$ | V    |
| Frequency Range                       | 1                  | 200          | 1            | 200          | 1            | 125          | MHz  |
| Supply Current                        | -                  | 30           | -            | 28           | -            | 20           | mA   |
| Duty Cycle                            | 45                 | 55           | 45           | 55           | 45           | 55           | %    |
| Output Level (CMOS)                   | Out High(Logic"1") | 2.97         | -            | 2.25         | 1.62         | -            | V    |
|                                       | Out Low(Logic"0")  | 0.33         | -            | 0.25         | 0.18         | -            |      |
| Start Time                            | -                  | 8            | -            | 8            | -            | 8            | mSec |
| Transition Time :Rise/Fall Time       | -                  | 2            | -            | 2            | -            | 3            | nSec |
| Tri-State                             | Output Enable      | 2.31         | -            | 1.75         | 1.26         | -            | V    |
|                                       | Output Disable     | -            | 0.99         | -            | 0.75         | 0.54         |      |
| Stand by current(@PD mode)            | -                  | 400          | -            | 400          | -            | 400          | uA   |
| Stand by current(@OE mode)            | -                  | 20           | -            | 20           | -            | 20           | mA   |
| Output Loading                        | 15                 |              | 15           |              | 15           |              |      |
| RMS Phase Jitter(12KHz to 20MHz)@3.3V | -                  | 1            | -            | 1            | -            | 1            | pSec |
| Aging(@25 1st year)                   | -                  | $\pm 3$      | -            | $\pm 3$      | -            | $\pm 3$      | 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.

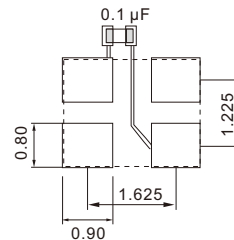
+ Transition times are measured between 10% and 90% of VDD, with an output load of 15pF.

### Dimension(mm)



| PIN# | Function  |
|------|-----------|
| 1    | Tri-State |
| 2    | GND       |
| 3    | Output    |
| 4    | VDD       |

### Solder Pad Layout(mm)



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

### FREQ. STABILITY vs. TEMP. RANGE

| Temp. (°C) \ ppm | ±15 | ±20 | ±25 | ±50 |
|------------------|-----|-----|-----|-----|
| -20 ~ +70        | Δ   | ○   | ○   | ○   |
| -40 ~ +85        | x   | Δ   | ○   | ○   |
| -40 ~ +105       | x   | x   | Δ   | ○   |

○: Available Δ: Conditional X: Not available

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