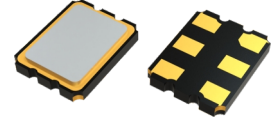


## 3.2 x 2.5 mm SMD CMOS Output Voltage Controlled Crystal Oscillator

### Feature

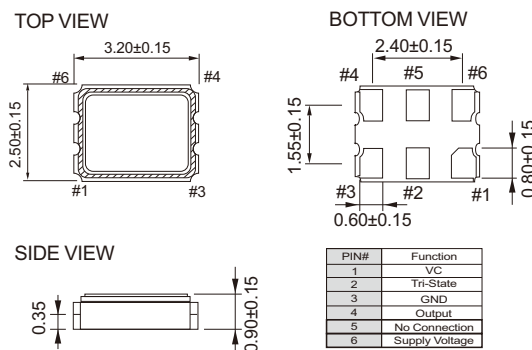
- Low power supply voltage: 3.3, 2.5 supply options.
- Frequency support from 10MHz to 250MHz.
- Low phase jitter typical: 0.8ps RMS from 12kHz TO 20MHz.
- Wide frequency control range. Tri-state enable/disable function
- Temperature range: -40 to 85°C operation
- Pb-free/ RoHS compliant



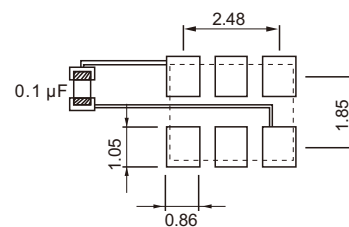
### Electrical Specifications

| Parameter                                      |               | CMOS    |         |        |        | Unit   |
|------------------------------------------------|---------------|---------|---------|--------|--------|--------|
|                                                |               | 3.3V    |         | 2.5V   |        |        |
|                                                |               | Min.    | Max.    | Min.   | Max.   |        |
| Supply Voltage Variation(VDD)                  |               | VDD-10% | VDD+10% | VDD-5% | VDD+5% | V      |
| Frequency Range                                |               | 10      | 250     | 10     | 250    | MHz    |
| Supply Current                                 |               | -       | 50      | -      | 45     | mA     |
| Output Level                                   | Output High   | 2.97    | -       | 2.25   | -      | V      |
|                                                | Output Low    | -       | 0.33    | -      | 0.25   |        |
| Transition Time ( 10% ~ 90% ) Rise/Fall Time + |               | -       | 1.0     | -      | 1.0    | nSec   |
| Duty Cycle                                     |               | 45      | 55      | 45     | 55     | %      |
| Start Time                                     |               | -       | 10      | -      | 10     | mSec   |
| Tri-State (input to Pin 2)                     |               |         |         |        |        | V      |
| Enable                                         |               | 70%VDD  | -       | 70%VDD | -      |        |
| Disable                                        |               | -       | 30%VDD  | -      | 30%VDD |        |
| Stand by Current                               |               | -       | 18      | -      | 18     | mA     |
| Output Loading ( 10MHz to 200MHz )             |               | -       | 15      | -      | 15     | pf     |
| Output Loading ( 200MHz to 250MHz )            |               | -       | 5       | -      | 5      | pf     |
| Phase Noise                                    |               | Typ.    | Max.    | Typ.   | Max.   | dBc/Hz |
| At VDD=3.3V,fout=250MHz                        | 1kHz offset   | -107    | -       | -107   | -      |        |
|                                                | 10kHz offset  | -111    | -       | -111   | -      |        |
|                                                | 100kHz offset | -114    | -       | -114   | -      |        |
|                                                | 1MHz offset   | -125    | -       | -125   | -      |        |
|                                                | 20MHz offset  | -147    | -       | -147   | -      |        |
| RMS Phase Jitter (12 kHz~20 MHz)               |               | 0.8     | 1.5     | 0.8    | 1.5    | pSec   |
| Control Voltage Center                         |               | 1.65    |         | 1.25   |        | V      |
| Control Voltage Range                          |               | 0.3     | 3       | 0.25   | 2.25   | V      |
| Frequency Pulling Range                        |               | ± 50    | ± 150   | ± 50   | ± 150  | ppm    |

### Dimension(mm)



### 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

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

○: Available △: Conditional X: Not available

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