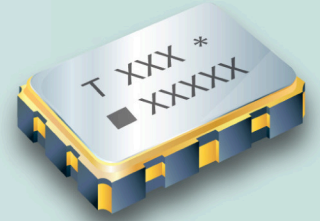


# Precise SMD Temperature Compensated Crystal Oscillators

## 5.0 x 3.2 x 1.2 mm 7P Series

### Features

- High Stability Over Temperature:  $\pm 0.1\text{ppm} \sim \pm 0.28\text{ppm}$
- Operating Temperature Range:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Holdover 24Hr:  $\pm 0.32\text{ppm}$  (Option)
- Free Run Stability for 20 years:  $\pm 4.6\text{ppm}$  (Option)
- Frequency: 10 ~ 52MHz
- Supply Voltage: 2.7V ~ 5.5V
- Voltage Control Function Available
- Output Enable/Disable Function Available
- Support Clipped Sine and CMOS Output Waveform
- Application: Small Cell, Base Station, Networking Infrastructure
- ROHS Compliant / Pb Free



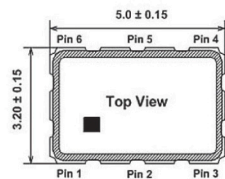
### Electrical Specifications

| Item / Type   |                                    | 7P                                      |                                  |
|---|------------------------------------|---|----------------------------------|
| Output Type   |                                    | Clipped Sinewave                        | CMOS                             |
| Output Load   |                                    | 10K $\Omega$ //10pF                     | 15pF                             |
| Output Voltage                                      |                                    | 0.8 Vp-p Min.                           | Output Low (VOL) 0.1 * Vcc Max.  |
|   |                                    |   | Output High (VOH) 0.9 * Vcc Min. |
| Supply Current                                      |                                    | 5 mA Max.                               | 10 mA Max.                       |
| Oscillation Mode                                    |                                    | Fundamental                             |                                  |
| Supply Voltage                                      |                                    | 2.7 ~ 5.5 V                             |                                  |
| Frequency Range                                     |                                    | 10 ~ 52 MHz                             |                                  |
| Initial Frequency Tolerance at 25°C after 2 Reflows |                                    | $\pm 2.0$ ppm                           |                                  |
| Frequency Tolerance                                 | Vs. Temperature ( - 40 ~ + 85 °C ) | $\pm 0.28 / \pm 0.5 / \pm 2.0$ ppm      |                                  |
|   | Vs. Load ( $\pm 5\%$ )             | $\pm 0.1$ ppm Max.                      |                                  |
|   | Vs. Supply Voltage ( $\pm 5\%$ )   | $\pm 0.1$ ppm Max.                      |                                  |
| Storage Temperature Range                           |                                    | $-55 \sim +125^{\circ}\text{C}$         |                                  |
| Auto Frequency Control Range (Option)               |                                    | $\pm 5 \sim \pm 16$ ppm (1.5 $\pm$ 1 V) |                                  |
| Start-up Time                                       |                                    | 2.5 ms Max.                             |                                  |
| Harmonics   |                                    | -5 dBc Max.                             |                                  |
| Phase Noise at 1KHz Offset                          |                                    | -130 dBc/Hz                             |                                  |
| Aging   |                                    | $\pm 1$ ppm / year Max.                 |                                  |
| 24 Hr Holdover Stability (Option) [#1]              |                                    | $\pm 40$ ppb                            |                                  |
| Free Run Stability for 20 Years (Option) [#2]       |                                    | $\pm 4.6$ ppm                           |                                  |

[#1] 24 hours at constant temperature after 48 hours operation.

[#2] Inclusive of initial tolerance at 25°C, temperature, supply voltage  $\pm 5\%$ , load  $\pm 5\%$ , reflow soldering and ageing 20 years.

### Dimensions

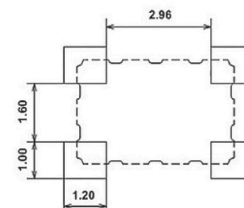
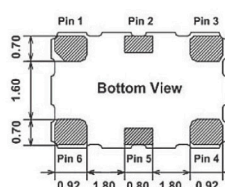


#### Pin Connection

| Name  | Connection |
|-------|------------|
| Pin 1 | AFC or GND |
| Pin 2 | NC         |
| Pin 3 | GND        |
| Pin 4 | FOUT       |
| Pin 5 | NC         |
| Pin 6 | VCC        |



#### Recommended Land Pattern



Units: mm