

## ROX5242T2

The ROX5242T2 belongs to a range of super single oven OCXOs designed as a compact and smart frequency source and time keeping reference for all synchronization systems, including precision positioning system bases equipment. These 52 x 42 mm package series of oscillators are designed with 2 circuits: 1 circuit with the crystal enclosed in a hermetic oven and 1 circuit with the amplifier stage. This structure enables an excellent stability versus temperature ( $\pm 0.2$  ppb). This high end OCXO is capable of replacing expensive Rubidium clocks in SDH/SONET Stratum 2 applications.

### Features

- Hold over below 5  $\mu$ s over 24 hours, including temperature change
- Standard frequencies: 10, 12.8, 13 and 15 MHz
- 2 packages height : 14 mm and 19 mm

### Applications

- Stratum 2 timing modules
- Time and frequency references
- Wireless Base Stations (GSM, UMTS, CDMA, LTE)
- Instrumentation and broadcasting

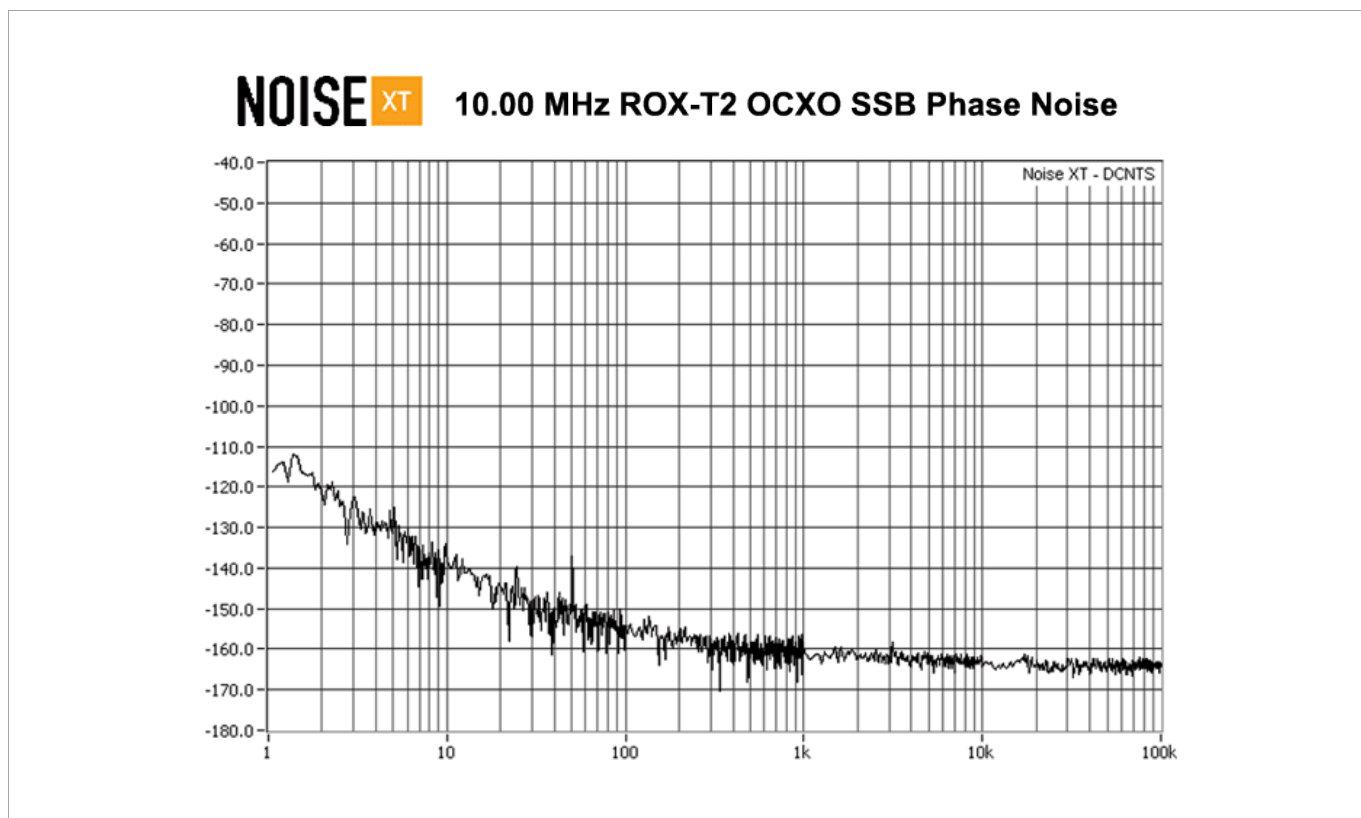
### 52 x 42 mm



### Standard Specifications

| Parameter                                    | Min. | Typ.   | Max.                              | Unit                                | Test Condition / Description   |
|--|------|--------|-----------------------------------|-------------------------------------|--|
| Nominal frequency                            |      | 5 - 15 |                                   | MHz                                 | Standard frequencies: 10, 12.8, 13 and 15 MHz  |
| Operating temperature range                  | -40  |        | 85                                | °C                                  |  |
| Frequency stability over temperature         |      |        | $\pm 0.2$                         | ppb                                 |  |
| Free-run accuracy over 20 years              |      |        | $\pm 0.04$                        | ppm                                 | Telcordia GR-1244 requirement is $\pm 4.6$ ppm   |
| Supply voltage stability                     |      |        | $\pm 0.05$                        | ppb                                 | $\pm 5\%$ at 25°C  |
| 24 hours holdover performance                |      |        | $\pm 5$                           | $\mu$ s                             | After 3 days of continuous power on, constant load and no supply change and 50°C window in operating temperature range, temperature gradient ( 10 °C / hour) |
| Hysteresis effect                            |      |        | 0.1                               | ppb                                 | Over -40 to +85°C, gradient 10°C / hour  |
| Long term stability (Ageing)                 |      |        | $\pm 0.05$<br>$\pm 8$<br>$\pm 40$ | ppb/day<br>ppb/year<br>ppb/20 years | After 1 week operation   |
| Short term 1s to 10s integration time        |      |        | $\pm 0.002$                       | ppb                                 |  |
| Retrace effect at 25°C                       |      |        | $\pm 5$                           | ppb                                 | After 24 hours off and 1 hour on   |
| Supply voltage (V <sub>CC</sub> )            |      | 5      |                                   | V                                   | $\pm 5\%$ . Other option 12V   |
| Power consumption                            |      |        | 8<br>3.5                          | W<br>W                              | During warm-up<br>Steady state at 25°C calm air  |
| Warm-up time                                 |      |        | $\pm 8$                           | minutes                             | Within 10 ppb of prior steady state output frequency at time of power-off. 24 hours on min. + 24 hours off max.  |
| Harmonics                                    |      | -40    |                                   | dBc                                 |  |
| Start-up time                                |      |        | 1                                 | sec                                 |  |
| Oscillator output - Sinewave                 | 5    |        | 9                                 | dBm                                 | Signal level with 50 $\Omega$ load   |
| Oscillator output – Compatible CMOS          |      |        |                                   |                                     |  |
| Output voltage level high (V <sub>OH</sub> ) | 2.4  |        |                                   | V                                   |  |
| Output voltage level low (V <sub>OL</sub> )  |      |        | 0.4                               | V                                   |  |
| Rise & fall time                             |      |        | 5                                 | ns                                  |  |
| Environmental                                |      |        |                                   |                                     |  |
| Vibration                                    |      |        | 10                                | g                                   | IEC 68-2-06 test Fc-Severity 500/10  |
| Shocks (3 directions)                        |      |        | 50                                | g                                   | IEC 68-2-27 test Ea severity 50A   |
| Storage temperature                          | -55  |        | 90                                | °C                                  |  |

**SSB Phase Noise: ROX-T2 OCXO (Typical value at 25°C)**



**Model Outline: ROX5242T2 OCXO**

