

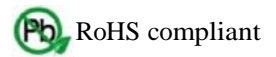
Features

Stability: ± 20 PPB over (-40 to +85) $^{\circ}$ C
 Excellent Yearly Aging of less than ± 50 PPB
 Phase Noise Floor: -163 dBc/Hz typical at 10KHz
 Allan Variance: For 1 second tau typ. $5.0E-12$

Packaging type R: 20.2 x 20.2 x 12.7 mm

Typical Applications

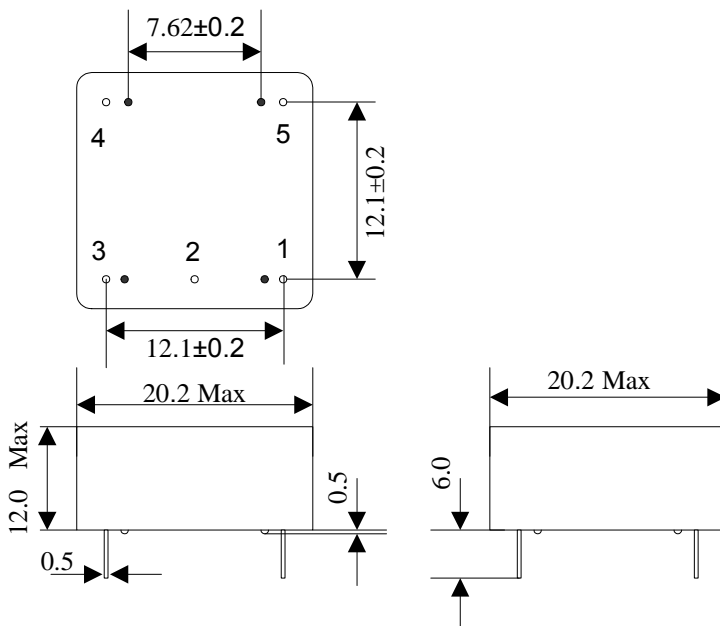
Test Instrumentation Reference
 GPS Timing Modules
 Microwave Communications



Description

The OCXO2020NF series offers outstanding phase noise and frequency stability in a compact 20.2 mm x 20.2 mm x 12.7 mm solder-sealed enclosure.

Physical Dimensions and Pin Connections



| PIN | FUNCTION |
|-----|-----------------|
| 1 | CONTROL VOLTAGE |
| 2 | REF. VOLTAGE |
| 3 | GND |
| 4 | RF OUTPUT |
| 5 | SUPPLY VOLTAGE |

OCXO2020NF-10.000MHz
Compact Low Noise Single Oven

| # | OCXO Specification | Sym. | Condition | Value | | | Unit | Included in the test data |
|---|--------------------------|--|--|-----------|----------|--------|--------|---------------------------|
| | | | | Min. | Typ. | Max. | | |
| 1.1 | Nominal Frequency | F _o | | 10.000000 | | | MHz | |
| 1.2 | Initial tolerance | | at +25°C | -0.1 | | 0.1 | ppm | |
| RF output | | | | | | | | |
| 2.1 | Wave form | | | Sine-wave | | | | |
| 2.2 | Level | L | | +5 | | +10 | dBm | V _{cc} = 5V |
| 2.3 | Load | R _L | | 45 | 50 | 55 | Ohm | |
| 2.4 | Harmonics level | | | | | -30 | dBc | |
| Frequency control | | | | | | | | |
| 3.1 | | | | | | | | |
| 3.2 | Control voltage range | V _c | | 0 | | 4.0 | V | |
| 3.3 | | | | | | | | |
| 3.4 | Slope | | | Positive | | | | |
| 3.5 | Pull range | | | +/- 0.500 | | | ppm | |
| 3.6 | | | | | | | | |
| 3.7 | Reference voltage | V _{ref} | | | 4.0 | | | |
| 3.8 | | | | | | | | |
| Power supply | | | | | | | | |
| 4.1 | Voltage | V _{cc} | | 4.75 | 5 | 5.25 | V | |
| 4.2 | Warm-up Power | | V _{cc} =5V | | | 4.0 | Watts | |
| 4.3 | Steady State Power | | at +25°C, V _{cc} =5V, still air | | | 1.5 | Watts | |
| 4.4 | Warm-up time | t _{up} | | | | 300 | sec. | |
| Frequency stability | | | | | | | | |
| 5.1 | vs. temperature | | from -40C to 85C | -20 | | +20 | ppb | |
| 5.2 | vs. supply voltage | | ref V _{cc} typ. | | +/-0.5 | | ppb | |
| 6 | Aging | per day | after 30 days of operation | | +/- 0.30 | | ppb | |
| | | per year | | | +/- 30 | +/- 50 | ppb | |
| 7.1 | SSB Phase Noise | | at 1 Hz offset | | | -95 | dBc/Hz | |
| | | | at 10 Hz offset | | | -125 | | |
| | | | at 100 Hz offset | | | -145 | | |
| | | | at 1 kHz offset | | | -155 | | |
| | | | at 10 kHz offset | | | -159 | | |
| 7.2 | Allan Variance | | 1 s | | 5.0 | | e-12 | |
| Maximum ratings, environmental, mechanical conditions. | | | | | | | | |
| | | | | | | | | |
| Operating temperature range | | -40°C to +85°C | | | | | | |
| Storage temperature range | | -55°C to +105°C | | | | | | |
| Humidity | | Hermetically sealed | | | | | | |
| Mechanical shock | | Per MIL-STD-202, 30G, 11ms, half sine | | | | | | |
| Vibration | | Per MIL-STD-202, 10G swept sine to 2000 Hz | | | | | | |
| Soldering conditions | | 260°C, 10s | | | | | | |