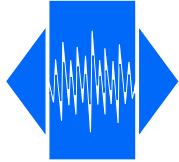


TX5S-STR3

STRATUM-III, high reliable, accurate,
analogue temperature compensated (VC)TCXO

Generic specification



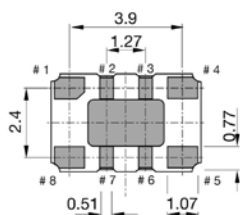
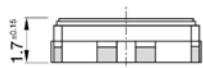
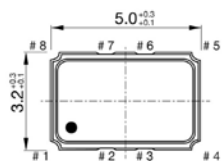
| | | | |
|--|--|---|------------------|
| Frequency range | 5.000 ~ 50.000 MHz | | |
| Standard frequencies (fundamental) | 5, 10, 12, 12.8, 13, 14.4, 16, 16.384, 19.2, 19.44, 20, 24, 24.576, 25, 26, 32, 32.768, 38.88, 40 and 50 MHz | | |
| Frequency stability: | ≤ ±4.6 ppm | overall | (Note #1) |
| vs. temperature referenced to (FMAX+FMIN)/2 | ≤ ±0.28 ppm | over -40 to +85 °C | (*) |
| Holdover stability | ≤ ±0.37 ppm | over 24 hours | (Note #2) |
| vs. aging @ +40 °C | ≤ ±0.6 ppm | 1 st year | |
| Frequency tolerance ex. factory | 0 ~ +1.0 ppm | @ +25 °C | |
| Supply voltage | +2.5 V to +3.3 V | | (*) |
| Output signal | Clipped sine wave | CMOS | (*) |
| Output level | > 0.8 Vp-p | V _{OH} > 0.9*V _{CC} / V _{OL} < 0.1*V _{CC} | |
| Output load | 10 kΩ // 10 pF | 15 pF | Max. |
| Current consumption, depending on frequency | 5 < mA | < 8 mA | |
| Electronic Frequency Control (EFC) | ΔF = ±5 ppm | positive slope | (*) |
| Control voltage (Vc) | +1.50 V ±1.0 V | | (*) |
| EFC input impedance | > 100 kΩ | | |
| Phase noise (typical value for 20 MHz) | -95 dBc/Hz | @ 10 Hz | |
| | -120 dBc/Hz | @ 100 Hz | |
| | -140 dBc/Hz | @ 1 kHz | |
| | -155 dBc/Hz | @ 10 kHz | |
| | -155 dBc/Hz | @ 100 kHz | |
| Operating temperature range | -40 ~ +85 °C | | (*) |
| Storage temperature range | -55 ~ +105 °C | | |
| Reflow Profiles as per IPC/JEDEC J-STD-020C | ≤ 260 °C over 10 sec. Max. | | |
| Moisture sensitivity | Level 1 (unlimited) | | |

(*) See available options on page #2

Note: Unless otherwise specified conditions are @+25 °C

Note #1: Including, frequency stability vs. temperature, tolerance @+25°C, aging 20 years, supply & load variation

Note #2: Constant temperature, supply and load change of ±5 % and aging over 24 hours

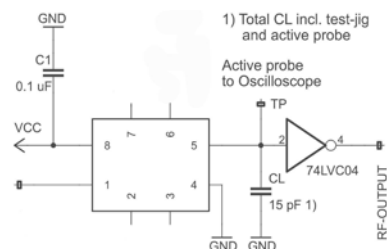


Pin function

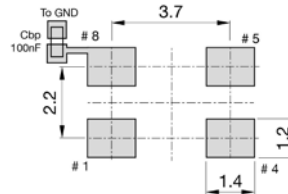
- # 1 Vc (EFC) for VC-TCXO
GND or NC for TCXO
- # 4 GND
- # 5 OUTPUT
- # 8 Vcc

Do not connect #2, #3, #6 and #7

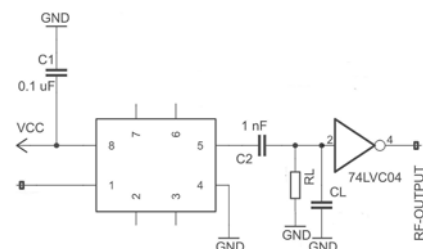
Test circuit for CMOS



Soldering pattern



Test circuit for CSW

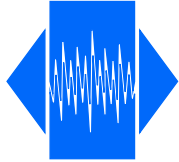


TX5S-STR3

STRATUM-III, high reliable, accurate,
analogue temperature compensated (VC)TCXO

Generic specification

QuartzCom
the communications company



Ordering code

(0)5S-(1)(2)-(3)(4)-(5)(7)-STR3-40.000MHz Example: **TX5S-H33-NNu28-STR3-40.000MHz**

| | | |
|--|---|---|
| Oscillator type TX = TCXO VT = VC-TCXO | (1) Output signal H = CMOS C = Clipped sine wave | (2) Supply voltage 28 = 2.8 V 30 = 3.0 V 33 = 3.3 V |
| (3) Operating temperature JK = -20 to +70 °C NN = -40 to +85 °C | (4) Frequency stability u28 = ± 0.28 ppm | (5) Pulling range (VT only) V05 = 1.5 ± 1.0 V ±5 ppm Z = special spec |

Environmental conditions

| Test | IEC 60068 Part... | IEC 60679-1 Clause | MIL-STD-202G Method | MIL-STD-810F Method | MIL-PRF-55310D Clause | Test conditions (IEC) |
|--|-------------------|--------------------|---------------------|---------------------|-----------------------|--|
| Sealing tests (if applicable) | 2-17 | 5.6.2 | 112E | | 3.6.1.2 | Gross leak: Test Qc, Fine leak: Test Qk |
| Solderability Resistance to soldering heat | 2-20 2-58 | 5.6.3 | 208H 210F | | 3.6.52 3.6.48 | Test Ta method 1, Test Td ₁ method 2, Test Td ₂ method 2 |
| Shock * | 2-27 | 5.6.8 | 213B Cond C | 516.4 | 3.6.40 | Test Ea, 3 x per axis 100 g, 6 ms half-sine pulse |
| Vibration, sinusoidal* | 2-6 | 5.6.7.1 | 204D Cond A | 516.4-4 | 3.6.38.1 3.6.38.2 | Test Fc, 30 min per axis, 10 Hz – 55 Hz 0,75 mm; 55 Hz – 2 kHz, 10 g |
| Vibration, random* | 2-64 | 5.6.7.3 | 214A | 514.5 | 3.6.38.3 3.6.38.4 | Test Fdb |
| Endurance tests - ageing - extended ageing | | 5.7.1 5.7.2 | 108A | | 4.8.35 | 30 days @ 85 °C 1000 h, 2000 h, 8000 h @ 85 °C |

Other environmental conditions on request

28 Dec. 20

2011/65/EU RoHS compliant

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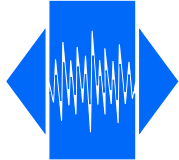
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From design to production
in Switzerland



QuartzCom AG reserves the right to make spec changes to this product



STRATUM-III, high reliable, accurate,
analogue temperature compensated (VC)TCXO

Generic specification

Handling Recommendation for SMD Crystal & Crystal Oscillator

1. ESD Handling

Crystal oscillators are electrostatic sensitive device. Therefore, direct touching of the terminals with fingers and without ESD precautions must be avoid.

Proper handling must be made according to the established ESD handling rules

IEC 61340-5-1 and EN 100015-1 to avoid degradations of the oscillator performance due to damages of the internal circuitry by electrostatic discharge.

2. Shocks & Vibrations

Excessive mechanical shocks and or vibrations during handling as well as manual and automatic assembly must be avoided.

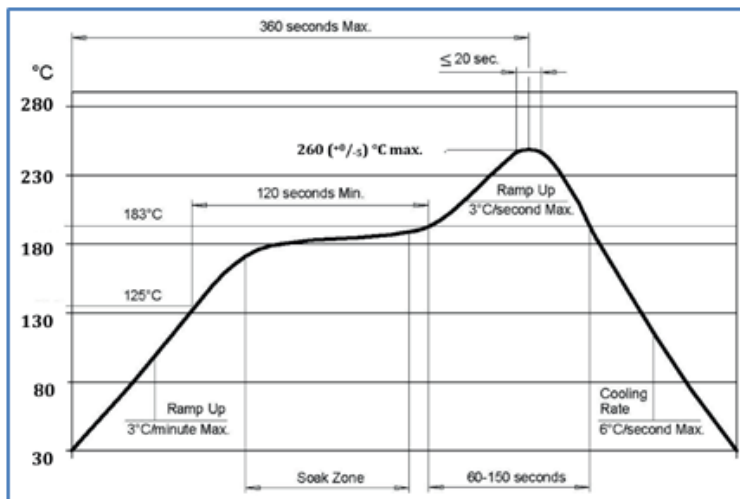
If accidently, the component was dropped or subject to strong shock, component should be verified that the electrical function is still within the specification and still hermetically sealed.

3. Thermal Shocks

Avoid steep temperature gradients. It might lead to breakage of the crystal blank
Infrared reflow processes in general are safe.

4. Soldering & Cleaning

Maximum Reflow Condition in accordance with JEDEC STD-020C



Avoid washing or welding processes using Ultrasonic energy. These processes can damage the crystal due to mechanical resonance of the crystal blanks.

5. Coating

Using resin may have an impact on the oscillator characteristics.

If resin is used, please contact QuartzCom or our representative for more information.

In situations where resin would be used without contacting us in advance,

QuartzCom will not be responsible for any damages caused to the components or and injuries caused to people.

