

**CRYSTAL OSCILLATOR
SPXO**

TCO-710x series

- Frequency range : 1.5 MHz to 75 MHz
- Supply voltage : 3.3 V
- External dimensions: 5.0 × 3.2 × 1.0 t (mm) Typ.
- Function : Standby (\overline{ST})



Product Number (please contact us)
X1G00xxx1xxx00



Actual size



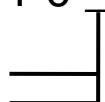
Specifications (characteristics)

| Item | Symbol | TCO-710*X1A* | Remarks |
|---------------------------------------|---------------------------------|-----------------------------------|--|
| Output frequency range | f _o | 1.500 MHz to 75.000 MHz | Please contact us for inquiries regarding the available frequencies. |
| Supply voltage | V _{cc} | 3.3 V ±0.33 V | |
| Storage temperature range | T _{stg} | -55 °C to +125 °C | Store as bare product after unpacking. |
| Operating temperature range | T _{use} | As per below description | |
| Frequency tolerance | f _{tol} | As per below description. | |
| Current consumption | I _{cc} | 20 mA Max. | No load condition |
| Symmetry | SYM | 40 % to 60 % | 50 % V _{cc} level |
| High output voltage | V _{OH} | 90 % V _{cc} Min. | I _{OH} =-5 mA |
| Low output voltage | V _{OL} | 10 % V _{cc} Max. | I _{OL} =5 mA |
| Output load condition (CMOS) | L _{CMOS} | 15 pF Max. | |
| Output enable / disable input voltage | V _{IH} | 70 % V _{cc} Min. | V _{IH} or OPEN : Enable |
| | V _{IL} | 30 % V _{cc} Max. | V _{IL} or GND : Disable |
| Rise time / Fall time | t _r / t _f | 6 ns Max. | 10 % V _{cc} to 90 % V _{cc} level |
| Start-up time | t _{str} | 10 ms Max. | Time at minimum supply voltage to be 0 s |
| Frequency aging | f _{aging} | ±5 × 10 ⁻⁶ / year Max. | +25 °C, V _{cc} =3.3 V, First year |

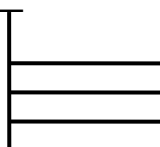
* Part Number

TCO - 7 1 0 X 1 A

<Frequency tolerance / V_{cc} tolerance>
 ±50 × 10⁻⁶ Max. / V_{cc} ±10 % : 6
 ±100 × 10⁻⁶ Max. / V_{cc} ±10 % : 7



<Operating temperature range>
 BLANK: 0 °C to +70 °C
 1: -10 °C to +70 °C
 2: -20 °C to +70 °C
 4: -40 °C to +85 °C



External dimensions

(Unit:mm)

Pin map

| Pin | Connection |
|-----|-----------------|
| 1 | ST |
| 2 | GND |
| 3 | OUT |
| 4 | V _{cc} |

Note.
 ST pin = HIGH or "open" : Specified frequency output.
 \overline{ST} pin = LOW : Output is high impedance, oscillation stops.

Footprint (Recommended)

(Unit:mm)

To maintain stable operation, provide by-pass capacitor with more than 0.1 μF at a location as near as possible to the power source terminal of the crystal products (between V_{cc} - GND).