



CRYSTAL OSCILLATOR

Low Profile / LOW-JITTER SPXO

SG-210S*D

- Frequency range : 50.000 MHz to 80.000 MHz
- Supply voltage : 1.8 V Typ. / 2.5 V Typ. / 3.3 V Typ.
- Current consumption : 7.0 mA Max.
(SDD 2.5 V No load condition 80 MHz)
- Function : Standby(\overline{ST})
- External dimensions : 2.5 × 2.0 × 0.8 t (mm) Typ.



Product Number (please contact us)
X1G0029x1xxxx00



Actual size



NEW

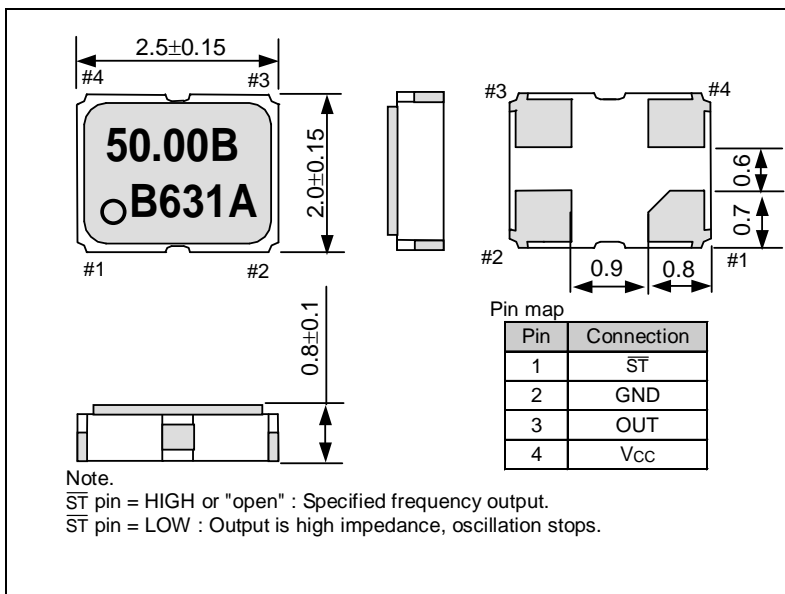
Specifications (characteristics)

| Item | Symbol | Specifications | | | Remarks |
|---------------------------------------|-----------------------|---|------------------------------|------------------------------|--|
| | | SG-210SED | SG-210SDD | SG-210SCD | |
| Output frequency range | f_0 | 50.000 MHz to 80.000 MHz | | | |
| Supply voltage | V_{CC} | 1.8 V Typ. 1.6 V to 2.2 V | 2.5 V Typ. 2.2 V to 3.0 V | 3.3 V Typ. 2.7 V to 3.6 V | |
| Temperature range | Storage temperature | $-40\text{ }^\circ\text{C}$ to $+125\text{ }^\circ\text{C}$ | | | Store as bare product after unpacking |
| | Operating temperature | $-40\text{ }^\circ\text{C}$ to $+85\text{ }^\circ\text{C}$ | | | |
| Frequency tolerance | f_{tol} | B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$ | | | $-20\text{ }^\circ\text{C}$ to $+70\text{ }^\circ\text{C}$ |
| | | L: $\pm 50 \times 10^{-6}$, M: $\pm 100 \times 10^{-6}$ | | | $-40\text{ }^\circ\text{C}$ to $+85\text{ }^\circ\text{C}$ |
| Current consumption | I_{CC} | 6.0 mA Max. | 7.0 mA Max. | 8.0 mA Max. | No load condition |
| Stand-by current | I_{std} | 10.0 μA Max. | | | $\overline{ST} = \text{GND}$ |
| Symmetry | SYM | 45 % to 55 % | | | 50 % V_{CC} level, $L_{CMOS} \leq 30\text{ pF}$ |
| High output voltage | V_{OH} | $V_{CC} - 0.4\text{ V}$ Min. | | | $I_{OH} = -8\text{ mA}$ (SCD, SDD), -4 mA (SED) |
| Low output voltage | V_{OL} | 0.4 V Max. | | | $I_{OL} = 8\text{ mA}$ (SCD, SDD), 4 mA (SED) |
| Output load condition (CMOS) | L_{CMOS} | 30 pF Max. | | | |
| Output enable / disable input voltage | V_{IH} | 70 % V_{CC} Min. | | | \overline{ST} terminal |
| | V_{IL} | 30 % V_{CC} Max. | | | |
| Rise time / Fall time | t_r / t_f | 4 ns Max. | | | 20 % V_{CC} to 80 % V_{CC} level, $L_{CMOS} \leq 30\text{ pF}$ |
| Start-up time | t_{str} | 2 ms Max. | | | $t=0$ at 90 % V_{CC} |
| | t_{DJ} | 0.5 ps Typ. | | | Deterministic Jitter |
| Jitter *1 | t_{RJ} | 3.0 ps Typ. | | | Random Jitter |
| | t_{RMS} | 25 ps Typ. | | | Peak to Peak |
| | t_{PJ} | 1.0 ps Max. | | | Offset frequency: 12 kHz to 20 MHz |
| Frequency aging | f_{aging} | $\pm 3 \times 10^{-6}$ / year Max.. | | | $+25\text{ }^\circ\text{C}$, First year, $V_{CC} = 1.8\text{ V}, 2.5\text{ V}, 3.3\text{ V}$ |
| | | $\pm 10 \times 10^{-6}$ / 10 years Max. | | | $+25\text{ }^\circ\text{C}$, 10 years, $V_{CC} = 1.8\text{ V}, 2.5\text{ V}, 3.3\text{ V}$ |

*1 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

