



CRYSTAL OSCILLATOR

Low Profile / LOW-JITTER SPXO

SG - 210 S*D

- Frequency range : 50.000 MHz to 80.000 MHz
- Supply voltage : 1.8 V / 2.5 V / 3.3 V
- 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 mm



Product Number (please contact us)
X1G0029x1xxxx00



Actual size



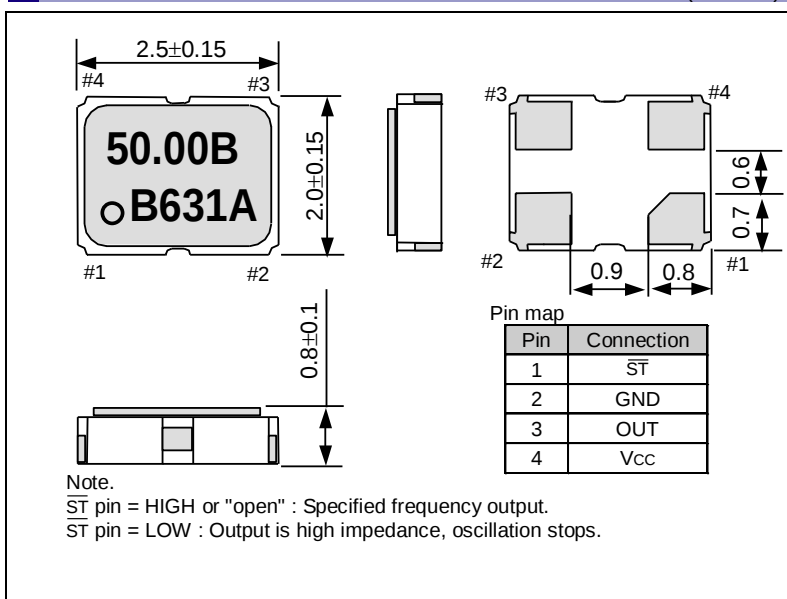
Specifications (characteristics)

Item	Symbol	Specifications			Conditions / 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	
Storage temperature	T_{stg}	-40 °C to +125 °C			Store as bare product.
Operating temperature	T_{use}	-40 °C to +85 °C			
Frequency tolerance	f_{tol}	B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$ L: $\pm 50 \times 10^{-6}$, M: $\pm 100 \times 10^{-6}$			-20 °C to +70 °C -40 °C to +85 °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 μ A Max.			$\overline{ST}$ = GND
Symmetry	SYM	45 % to 55 %			50 % V_{CC} level, $L_{CMOS} \leq 30$ pF
Output voltage	V_{OH} V_{OL}	V_{CC} -0.4 V Min. 0.4 V Max.			I_{OH} = -8 mA(SCD, SDD), -4 mA(SED) I_{OL} = 8 mA(SCD, SDD), 4 mA(SED)
Output load condition (CMOS)	L_{CMOS}	30 pF Max.			
Input voltage	V_{IH} V_{IL}	70 % V_{CC} Min. 30 % V_{CC} Max.			$\overline{ST}$ terminal
Rise time / Fall time	t_r / t_f	4 ns Max.			20 % V_{CC} to 80 % V_{CC} level, $L_{CMOS} \leq 30$ pF
Start-up time	t_{str}	2 ms Max.			$t=0$ at 90 % V_{CC}
Jitter *1	t_{DJ}	0.1 ps Typ.	0.1 ps Typ.		Deterministic Jitter
	t_{RJ}	3.2 ps Typ.	2.7 ps Typ.		Random Jitter
	t_{RMS}	30 ps Typ.	25 ps Typ.		Peak to Peak
Phase Jitter	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 °C, First year, V_{CC} = 1.8 V, 2.5 V, 3.3 V
		$\pm 10 \times 10^{-6}$ / 10 years Max.			+25 °C, 10 years, V_{CC} = 1.8 V, 2.5 V, 3.3 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)

