



CRYSTAL OSCILLATOR SPXO

SG-210 series

- Frequency range : 2 MHz to 48 MHz
- Supply voltage : 1.5 V Typ. / 1.8 V Typ. / 2.5 V Typ. / 3.3 V Typ.
- Current consumption : 0.9 mA Typ.
(SEB 1.8 V No load condition 48 MHz)
- Function : Standby(\overline{ST})
- Thickness : 0.8 mm Typ.



Actual size

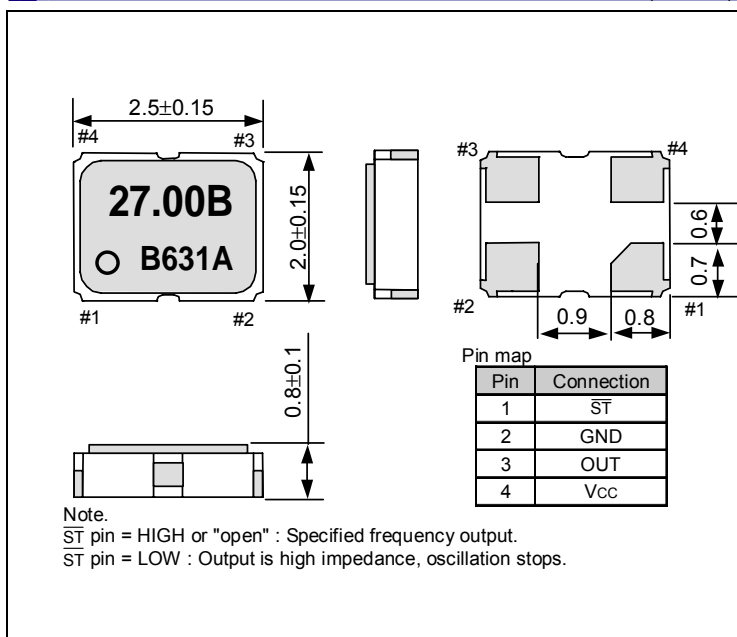


Specifications (characteristics)

Item	Symbol	Specifications				Remarks
		SG-210SGB	SG-210SEB	SG-210SDB	SG-210SCB	
Output frequency range	f_0	2 MHz to 32 MHz	2 MHz to 48 MHz			
Supply voltage	V_{CC}	1.5 V Typ. 1.3 V to 1.7 V	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 °C to +125 °C				Store as bare product after unpacking
	Operating temperature	-40 °C to +85 °C				
Frequency tolerance	$f_{to}(\text{osc})$	F: $\pm 20 \times 10^{-6}$				-10 °C to +60 °C, $f_0 \leq 32$ MHz, $V_{CC} \pm 10\%$, except reflow drift.
		B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$				-20 °C to +70 °C
		L: $\pm 50 \times 10^{-6}$, M: $\pm 100 \times 10^{-6}$				-40 °C to +85 °C
Current consumption	I_{CC}	1.0 mA Max.	1.6 mA Max.	2.4 mA Max.	3.0 mA Max.	No load condition
Stand-by current	I_{std}	0.3 μ A Max.	0.5 μ A Max.	1.0 μ A Max.	1.0 μ A Max.	$\overline{ST} = \text{GND}$
Symmetry	SYM	45 % to 55 %	45 % to 55 %	45 % to 55 %	45 % to 55 %	50 % V_{CC} level $L_{CMOS} \leq 15$ pF
		40 % to 60 %	40 % to 60 %	40 % to 60 %		
High output voltage	V_{OH}	90 % V_{CC} Min.				$I_{OH} = -1$ mA
Low output voltage	V_{OL}	10 % V_{CC} Max.				$I_{OL} = 1$ mA
Output load condition (CMOS)	L_{CMOS}	15 pF Max.				
Output enable / disable input voltage	V_{IH}	80 % V_{CC} Min.				\overline{ST} terminal
	V_{IL}	20 % V_{CC} Max.				
Output rise and fall time	t_r / t_f	5 ns Max.	4 ns Max.	3 ns Max.		20 % V_{CC} to 80 % V_{CC} level, $L_{CMOS} = 15$ pF
Oscillation start up time	t_{osc}	3 ms Max.				$t=0$ at 90 % V_{CC}
Frequency aging	f_{aging}	$\pm 3 \times 10^{-6}$ / year Max.				+25 °C, First year, $V_{CC} = 1.5V, 1.8V, 2.5V, 3.3V$

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

