



CRYSTAL OSCILLATOR

LOW-JITTER SPXO

NEW

Product Number (please contact us)
 SG-210SCH: X1G003931xxxx00
 SG-210SDH: X1G003941xxxx00
 SG-210SEH: X1G003951xxxx00

SG - 210 S*H

- Frequency range : 80.000 MHz to 170.000 MHz
Fundamental mode oscillator
- Supply voltage : 1.8 V / 2.5 V / 3.3 V
- Output : CMOS
- Function : Standby($\overline{ST}$)
- External dimensions : 2.5 × 2.0 × 0.8 mm



Actual size



Specifications (characteristics)

Item	Symbol	Specifications			Conditions / Remarks	
		SG-210SEH	SG-210SDH	SG-210SCH		
Output frequency range	fo	80.000 MHz to 170.000 MHz			Standard frequency. *1	
		100MHz, 106.25MHz, 125MHz, 133.33MHz, 150MHz, 156.25MHz				
Supply voltage	Vcc	1.8 V ± 10%	2.5 V ± 10%	3.3 V ± 10%	*2	
Storage temperature	T_stg	-40 °C to +125 °C			Storage as single product.	
Operating temperature	T_use	-40 °C to +85 °C				
Frequency tolerance	f_tol	B: ±50 × 10 ⁻⁶ , C: ±100 × 10 ⁻⁶			-20 °C to +70 °C	
		L: ±50 × 10 ⁻⁶ , M: ±100 × 10 ⁻⁶			-40 °C to +85 °C	
Current consumption	Icc	6.0 mA Max.	7.0 mA Max.	9.0 mA Max.	No load condition,80 MHz≤fo≤125 MHz	
		8.0 mA Max.	9.0 mA Max.	11.0 mA Max.	No load condition,125 MHz<fo≤170 MHz	
Stand-by current	I_std	10.0 μA Max.			ST =GND	
Symmetry	SYM	45 % to 55 %			50 % Vcc level, L_CMOS ≤ 15 pF	
Output voltage	VOH	90 % Vcc Min.			IoH = -4mA	
	VOL	10 % Vcc Max.			IoL = 4mA	
Output load condition (CMOS)	L_CMOS	15 pF Max.				
Input voltage	VIH	80 % Vcc Min.			ST terminal	
	VIL	20 % Vcc Max.				
Rise time / Fall time	t _r / t _f	3 ns Max.	2 ns Max.		20 % Vcc to 80 % Vcc level, L_CMOS ≤15 pF	
Start-up time	t_str	5 ms Max.			T=0 at 90 % Vcc	
Jitter *3	tp-p	22 ps Typ.	20 ps Typ.		Peak to Peak	L_CMOS ≤ 15 pF
Phase Jitter	tpj	0.7 ps Max.	0.6 ps Max.		Offset frequency: 12kHz to 20MHz	
Frequency aging	f_aging	±5 × 10 ⁻⁶ / year Max.			+25 °C, First year	

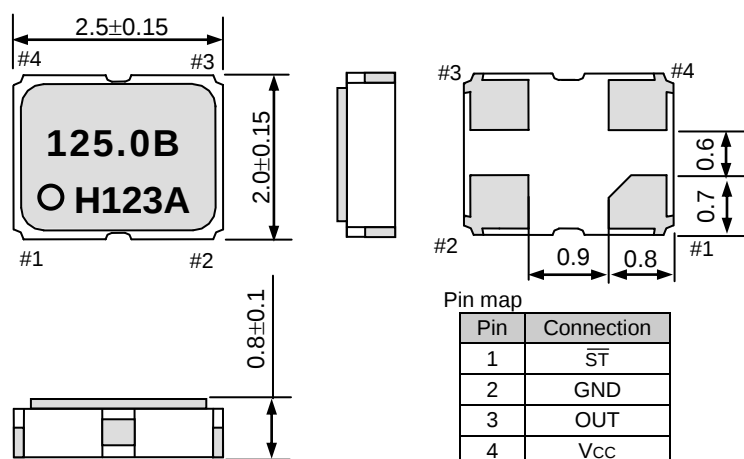
*1 Please contact us for requirements not listed in the specification.

*2 fo ≥ 157MHz: Vcc ± 5%

*3 Based on SIA-3100C signal integrity analyzer made from WAVECREST.

External dimensions

(Unit:mm)

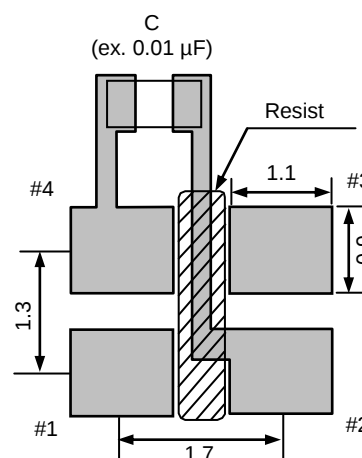


Note.

 $\overline{ST}$ 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 a 0.01µF to 0.1µF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).