

NEW



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

**CRYSTAL OSCILLATOR
 LOW-JITTER SPXO**

SG-210S*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	f_o	80.000 MHz to 170.000 MHz 100MHz, 106.25MHz, 125MHz, 133.33MHz, 150MHz, 156.25MHz			Standard frequency. *1
Supply voltage	V_{cc}	1.8 V \pm 10%	2.5 V \pm 10%	3.3 V \pm 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: $\pm 50 \times 10^{-6}$, 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. 8.0 mA Max.	7.0 mA Max. 9.0 mA Max.	9.0 mA Max. 11.0 mA Max.	No load condition, 80 MHz $\leq f_o \leq$ 125 MHz No load condition, 125 MHz $< f_o \leq$ 170 MHz
Stand-by current	I_{std}	10.0 μ A Max.			\overline{ST} = GND
Symmetry	SYM	45 % to 55 %			50 % V_{cc} level, $L_{CMOS} \leq 15$ pF
Output voltage	V_{OH} V_{OL}	90 % V_{cc} Min. 10 % V_{cc} Max.			$I_{OH} = -4$ mA $I_{OL} = 4$ mA
Output load condition (CMOS)	L_{CMOS}	15 pF Max.			
Input voltage	V_{IH} V_{IL}	80 % V_{cc} Min. 20 % V_{cc} Max.			\overline{ST} terminal
Rise time / Fall time	t_r / t_f	3 ns Max.	2 ns Max.		20 % V_{cc} to 80 % V_{cc} level, $L_{CMOS} \leq 15$ pF
Start-up time	t_{str}	5 ms Max.			$T=0$ at 90 % V_{cc}
Jitter *3	$tp-p$	22 ps Typ.	20 ps Typ.		Peak to Peak $L_{CMOS} \leq 15$ pF
Phase Jitter	tpj	0.7 ps Max.	0.6 ps Max.		Offset frequency: 12kHz to 20MHz
Frequency aging	f_{aging}	$\pm 5 \times 10^{-6}$ / year Max.			+25 °C, First year

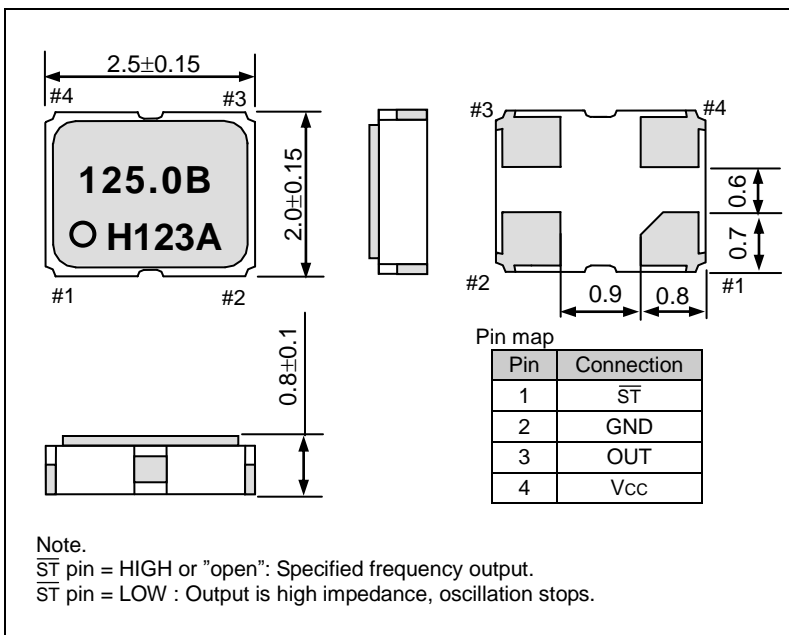
*1 Please contact us for requirements not listed in the specification.

*2 $f_o \geq 157$ MHz: $V_{cc} \pm 5\%$

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

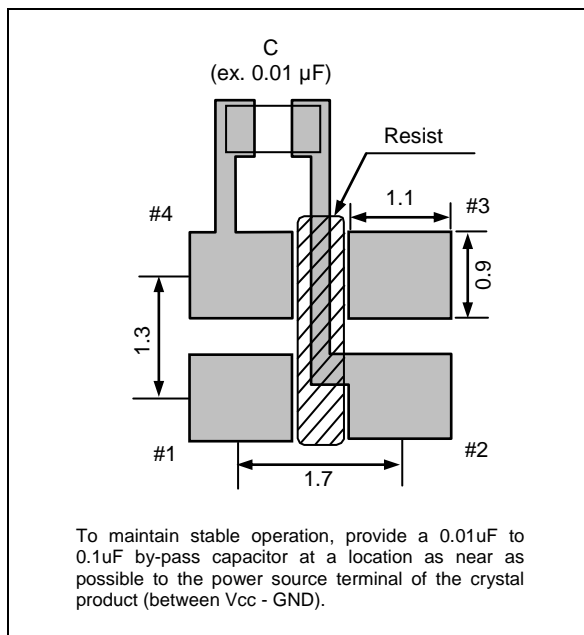
External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)



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