

**CRYSTAL OSCILLATOR  
SPXO**

**NEW**



Product Number (please contact us)  
X1G004171xxxx00

**SG-210 STF**

- Frequency range : 1 MHz to 60 MHz
- Supply voltage : 1.6 V to 3.6 V
- Function : Standby( $\overline{ST}$ )
- External dimensions : 2.5 × 2.0 × 0.8 mm
- Operation temperature : -40 to +105 °C



Actual size

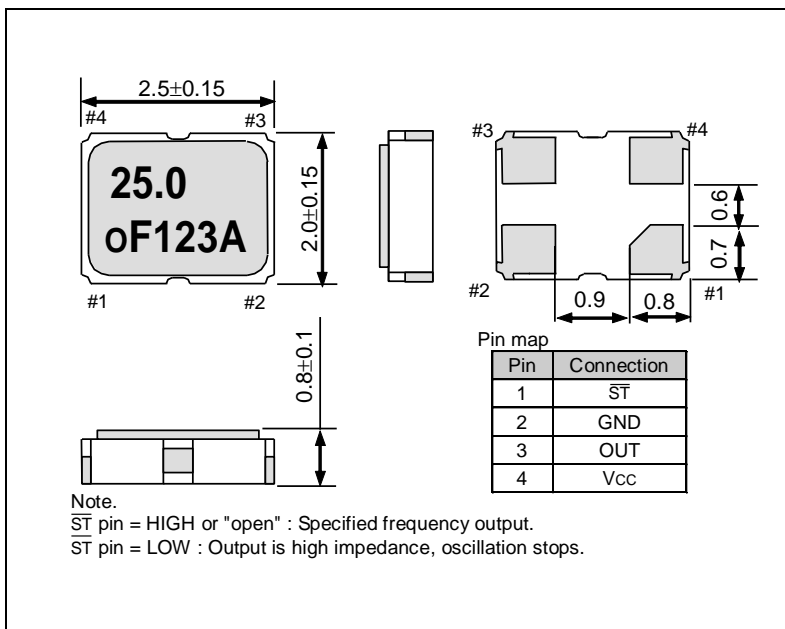


**Specifications (characteristics)**

Item	Symbol	Specifications	Conditions / Remarks		
Output frequency range	$f_0$	1MHz to 60MHz	Please contact us about available frequencies.		
Supply voltage	Vcc	1.6V to 3.6V			
		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	Storage as single product.		
Operating temperature	T_use	-40 °C to +85 °C / -40 °C to +105 °C			
Frequency tolerance	f_tol	S: $\pm 25 \times 10^{-6}$	-20 °C to +70 °C		
		L: $\pm 50 \times 10^{-6}$	-40 °C to +85 °C		
		Y: $\pm 50 \times 10^{-6}$ , W: $\pm 100 \times 10^{-6}$	-40 °C to +105 °C		
Current consumption	Icc	1.5 mA Max.	No load condition 1MHz <math>f_0 \le 20\text{MHz}</math>		
		1.8 mA Max.	No load condition 20MHz <math>f_0 \le 40\text{MHz}</math>		
		2.1 mA Max.	No load condition 40MHz <math>f_0 \le 60\text{MHz}</math>		
Stand-by current	I_std	1.6 mA Max.			
		2.0 mA Max.			
		2.4 mA Max.			
Symmetry	SYM	2.5 $\mu\text{A}$ Max.	$\overline{ST}$ = GND		
		2.5 % to 55 %	50 % Vcc level		
			L_CMOS $\le 15$ pF		
Output voltage	V <sub>OH</sub>	90% Vcc Min.			
	V <sub>OL</sub>	10% Vcc Max..			
Output load condition (CMOS)	L_CMOS	15 pF Max.			
Input voltage	V <sub>IH</sub>	80 % Vcc Min.	$\overline{ST}$ terminal		
	V <sub>IL</sub>	20 % Vcc Max.			
Rise time and Fall time	t <sub>r</sub> / t <sub>f</sub>	4 ns Max. / 3 ns Max.	20 % Vcc to 80 % Vcc level, L_CMOS=15 pF		
Start-up time	t_str	3 ms Max.	t=0 at 90 % Vcc+85°C, (+105 °C.)		
Frequency aging	f_aging	$\pm 3 \times 10^{-6}$ / year Max.	+25 °C, First year, Vcc=1.8 V, 2.5 V, 3.3 V		
SSB Phase noise	C/N	-145 dBc/Hz Typ.	@1kHz ,f <sub>o</sub> =48MHz		
		-158 dBc/Hz Typ.	@100kHz ,f <sub>o</sub> =48MHz		
		-161 dBc/Hz Typ.	@Floor Lv.		

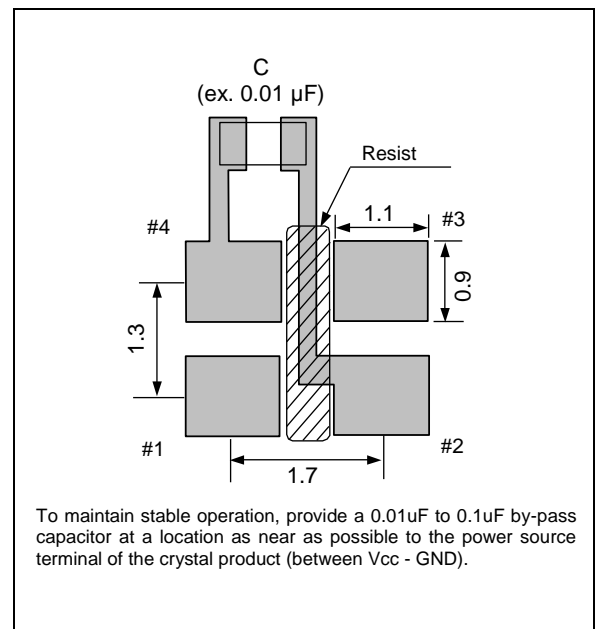
**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)



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