

CRYSTAL OSCILLATOR Low Profile / High stability SPXO

SG-211 S*E

•Frequency range : 2.375 MHz to 60.000 MHz Supply voltage : 1.8 V / 2.5 V / 3.3 V

•Current consumption : 1.2 mA Typ.

(SEE: 1.8 V No load condition 40 MHz)

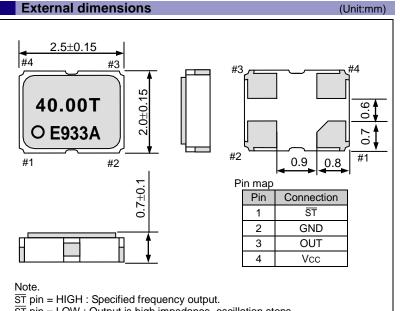
: Standby(ST) •External dimensions : $2.5 \times 2.0 \times 0.7$ mm



Specifications (characteristics)

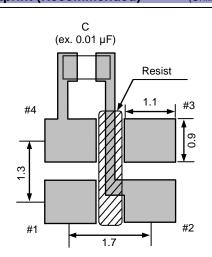
Item	Symbol	Specifications			Conditions / Domonics
		SG-211SEE	SG-211SDE	SG-211SCE	Conditions / Remarks
Output frequency range	fo	2.375 MHz to 60.000 MHz			Please contact us about available frequencies.
Supply voltage	Vcc	1.8 V Typ. 1.6 V to 2.2 V	2.5 V Typ. 2.2 V to 2.7 V	3.3 V Typ. 2.7 V to 3.6 V	
Storage temperature	T_stg	-40 °C to +125 °C			Storage as single product.
Operating temperature	T_use	-40 °C to +90 °C			
Frequency tolerance *	f_tol	D: ±20 × 10 ⁻⁶ , E: ±15 × 10 ⁻⁶ H: ±20 × 10 ⁻⁶ , T: ±15 × 10 ⁻⁶ a: ±15 × 10 ⁻⁶ , b: ±20 × 10 ⁻⁶ , d: ±25 × 10 ⁻⁶			-20 °C to +70 °C -40 °C to +85 °C -40 °C to +90 °C -40 °C to +90 °C
Current consumption	Icc -	2.3 mA Max. 2.8 mA Max. 3.3 mA Max. 4.5 mA Max.	2.5 mA Max. 3.0 mA Max. 3.5 mA Max. 5.0 mA Max.	3.5 mA Max. 4.0 mA Max. 4.5 mA Max. 6.0 mA Max.	No load condition,2.375 MHz≤fo≤32 MHz No load condition,32 MHz <fo≤40 condition,40="" condition,48="" load="" mhz="" mhz<="" mhz<fo≤48="" mhz<fo≤60="" no="" td=""></fo≤40>
Stand-by current	I_std	5.0 µA Max.			ST =GND
Symmetry	SYM	45 % to 55 %			50 % Vcc level,L_CMOS ≤ 15 pF
Output voltage	Voh Vol	90 % Vcc Min. 10 % Vcc Max.			IOH=-4 mA IOL= 4 mA
Output load condition (CMOS)	L_CMOS	15 pF Max.			
Input voltage	VIH VIL	80 % Vcc Min. 20 % Vcc Max.			ST terminal
Rise time / Fall time	tr/ tf	4.5 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
Frequency aging	f_aging	This is included in frequency tolerance specification.			+25 °C, First year, Vcc= 1.8 V, 2.5 V, 3.3 V

^{*} Please contact us for inquiries regarding available frequency tolerance.



ST pin = LOW: Output is high impedance, oscillation stops.

Footprint (Recommended) (Unit:mm)



To maintain stable operation, provide a $0.01 \mathrm{uF}$ to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

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