

CRYSTAL OSCILLATOR SPXO

SG - 310 series

- Frequency range : 2 MHz to 48 MHz
- Supply voltage : 1.8 V Typ. / 2.5 V Typ. / 3.3 V Typ.
- Current consumption : SEF1.8 V No load condition 48 MHz
1.5 mA Typ.
- Function : Standby($\overline{ST}$)
- Thickness : 1.05 mm Typ.



Actual size

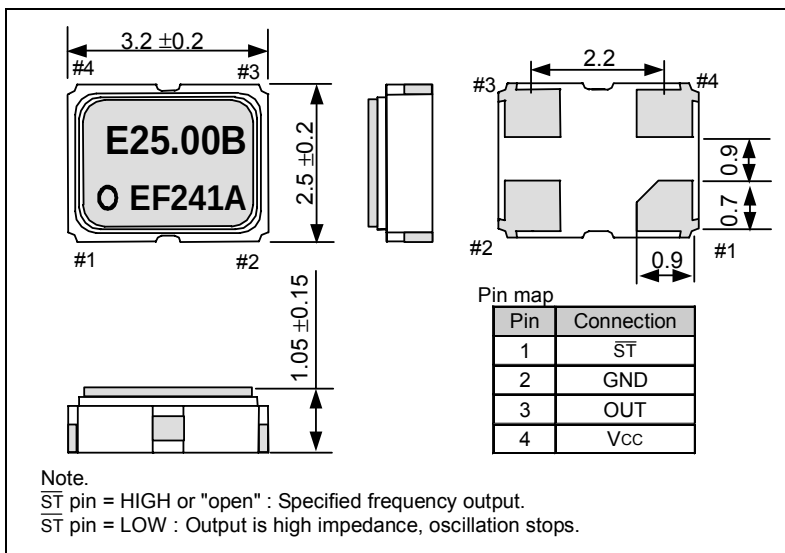


Specifications (characteristics)

Item		Symbol	Specifications					Remarks	
			SG-310 SEF	SG-310 SDF	SG-310 SCF	SG-310 SDN	SG-310 SCN		
Output frequency range		f _o	2.000 MHz to 48.000 MHz			3.000 MHz to 48.000 MHz			
Supply voltage		V _{CC}	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	2.5 V Typ. 2.2 V to 2.7 V	3.3 V Typ. 2.7 V to 3.6 V		
Temperature range	Storage temperature	T _{stg}	-40 °C to +125 °C					Store as bare product after unpacking	
	Operating temperature	T _{use}	-40 °C to +85 °C						
Frequency tolerance		F _{tol} (osc)	B: ±50 × 10 ⁻⁶ , C: ±100 × 10 ⁻⁶			—		-20 °C to +70 °C	
			M: ±100 × 10 ⁻⁶			—		-40 °C to +85 °C	
			—			D:±20 × 10 ⁻⁶ , S:±25 × 10 ⁻⁶		-20 °C to +70 °C	V _{CC} ±10 %
			—			R:±25 × 10 ⁻⁶		-30 °C to +85 °C	
			—			P:±20 × 10 ⁻⁶		-30 °C to +85 °C	V _{CC} ±5 %
Current consumption		I _{CC}	—			J:±25 × 10 ⁻⁶		-40 °C to +85 °C	
			1.5 mA Max.	1.5 mA Max.	1.5 mA Max.	—	No load condition, 2 MHz≤f _o ≤ 4 MHz		
			1.5 mA Max.	1.5 mA Max.	2.0 mA Max.		No load condition, 4 MHz<f _o ≤ 8 MHz		
			1.5 mA Max.	2.0 mA Max.	2.5 mA Max.		No load condition, 8 MHz<f _o ≤16 MHz		
			2.0 mA Max.	2.0 mA Max.	2.5 mA Max.		No load condition, 16 MHz<f _o ≤25 MHz		
			2.0 mA Max.	2.5 mA Max.	3.5 mA Max.		No load condition, 25 MHz<f _o ≤33 MHz		
			3.0 mA Max.	3.5 mA Max.	4.5 mA Max.		No load condition, 33 MHz<f _o ≤48 MHz		
Stand-by current		I _{std}	0.7 μA Max. (0.2 μA Typ.)	1.5 μA Max. (0.5 μA Typ.)	2.0 μA Max. (1.0 μA Typ.)	1.5 μA Max.	3.0 μA Max.	No load condition, f _o ≤48 MHz	
Symmetry	SYM	45 % to 55 %	45 % to 55 %	45 % to 55 %	45 % to 55 %		2 MHz≤f _o ≤16 MHz	50 % V _{CC} level L _{CMOS} ≤ 15 pF	
		40 % to 60 %	40 % to 60 %	16 MHz<f _o ≤40 MHz					
High output voltage	V _{OH}	90 % V _{CC} Min.					I _{OH} = -3 mA		
Low output voltage	V _{OL}	10 % V _{CC} Max.					I _{OL} = 3 mA		
Output load condition (CMOS)		L _{CMOS}	15 pF Max.						
Output enable / disable input voltage	V _{IH}	80 % V _{CC} Min.			70 % V _{CC} Min.		ST terminal		
	V _{IL}	20 % V _{CC} Max.			30 % V _{CC} Max.				
Output rise and fall time		tr/ tf	4 ns Max.					20 % V _{CC} to 80 % V _{CC} level, L _{CMOS} =15 pF	
Oscillation start up time		t _{osc}	10 ms Max.			2 ms Max.		t=0 at 90 % V _{CC}	
Frequency aging		F _{aging}	±5 × 10 ⁻⁶ / year Max.			±3 × 10 ⁻⁶ / year Max.		+25 °C, First year,V _{CC} =1.8 V, 2.5 V, 3.3 V	

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

