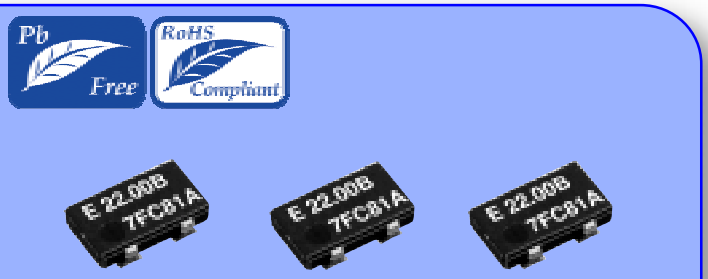
CRYSTAL OSCILLATOR
SPXO

SG - 550 series

- Frequency range : 1 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 : 1.2 mm Max.

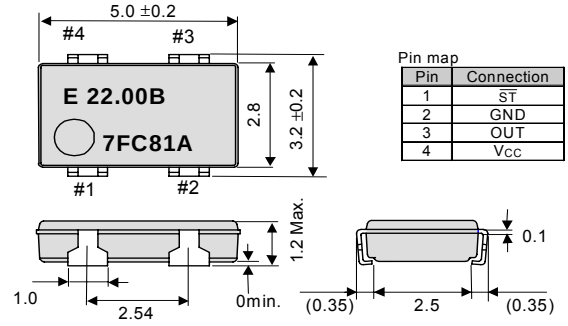


Actual size

Specifications (characteristics)

Item		Symbol	Specifications				Remarks	
			SG-550SEF	SG-550SDF	SG-550SCF	SG-550SCG		
Output frequency range		f_0	2 MHz to 48 MHz			1 MHz to 48 MHz		
Supply voltage		Vcc	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			
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: $\pm50 \times 10^{-6}$,C: $\pm100 \times 10^{-6}$			—	-20 °C to +70 °C	
			M: $\pm100 \times 10^{-6}$			—	-40 °C to +85 °C	
			—			S: $\pm25 \times 10^{-6}$	-20 °C to +70 °C	Vcc ±5 %
			L: $\pm50 \times 10^{-6}$			—	-40 °C to +85 °C	
Current consumption		Icc	1.5 mA Max.	1.5 mA Max.	1.5 mA Max.	—	No load condition, 2 MHz≤f_0≤ 4 MHz	
			1.5 mA Max.	1.5 mA Max.	2.0 mA Max.	—	No load condition, 4 MHz<f_0≤ 8 MHz	
			1.5 mA Max.	2.0 mA Max.	2.5 mA Max.	—	No load condition, 8 MHz<f_0≤16 MHz	
			2.0 mA Max.	2.0 mA Max.	2.5 mA Max.	—	No load condition, 16 MHz<f_0≤25 MHz	
			2.0 mA Max.	2.5 mA Max.	3.5 mA Max.	—	No load condition, 25 MHz<f_0≤33 MHz	
			3.0 mA Max.	3.5 mA Max.	4.5 mA Max.	—	No load condition, 33 MHz<f_0≤48 MHz	
			—	—	—	12 mA Max.	No load condition, Max.frequency output.	
Stand-by current		I_std	0.7 µA Max.	1.5 µA Max.	2.0 µA Max.	50 µA Max.	$\overline{ST}$ =GND	
Symmetry		SYM	45 % to 55 %	45 % to 55 %		45 % to 55 %	1 MHz≤f_0≤16 MHz	50 % Vcc level L_CMOS ≤ 15 pF
			40 % to 60 %				16 MHz<f_0≤40 MHz	
				40 % to 60 %			40 MHz<f_0≤48 MHz	
High output voltage		VOH	90 % Vcc Min.			Vcc-0.4 V Min.	IOH=-3 mA(SEF, SDF, SCF), -8 mA(SCG)	
Low output voltage		VOL	10 % Vcc Max.			0.4 V Max.	IOL= 3 mA(SEF, SDF, SCF), 8 mA(SCG)	
Output load condition(CMOS)		L_CMOS	15 pF Max.					
Output enable / disable input voltage		VIH	80 % Vcc Min.			70 % Vcc Min.	$\overline{ST}$ terminal	
		VIL	20 % Vcc Max.					
Output rise and fall time		t_r / t_f	4 ns Max.				20 % Vcc to 80 % Vcc level, L_CMOS=15 pF	
Oscillation start up time		tosc	10 ms Max.			12 ms Max.	t=0 at 90 % Vcc	
Frequency aging		F_aging	$\pm5 \times 10^{-6}$ / year Max.			$\pm10 \times 10^{-6}$ Max. 10 years	+25 °C, First year, Vcc=1.8 V, 2.5 V, 3.3 V	

External dimensions (Unit:mm)



Pin map

Pin	Connection
1	$\overline{ST}$
2	GND
3	OUT
4	Vcc

Note.
$\overline{ST}$ pin
$\overline{ST}$ pin = HIGH or "open" : Specified frequency output.
$\overline{ST}$ pin = LOW : Output is low level (weak pull - down), oscillation stops.(SCG)/ High-z(SEF,SDF,SCF)

Metal may be exposed on the top or bottom of this product.
This will not affect any quality, reliability or electrical spec.

Footprint (Recommended) (Unit:mm)