



# CRYSTAL OSCILLATOR SPXO

## SG-710 series

- Frequency range : 1.8 MHz to 125 MHz
- Supply voltage : 3.3 V or 5.0 V
- Function : Output enable (OE) PTK,PHK  
Standby ( $\overline{ST}$ ) ECK
- Thickness : 1.3 mm Typ.



Actual size

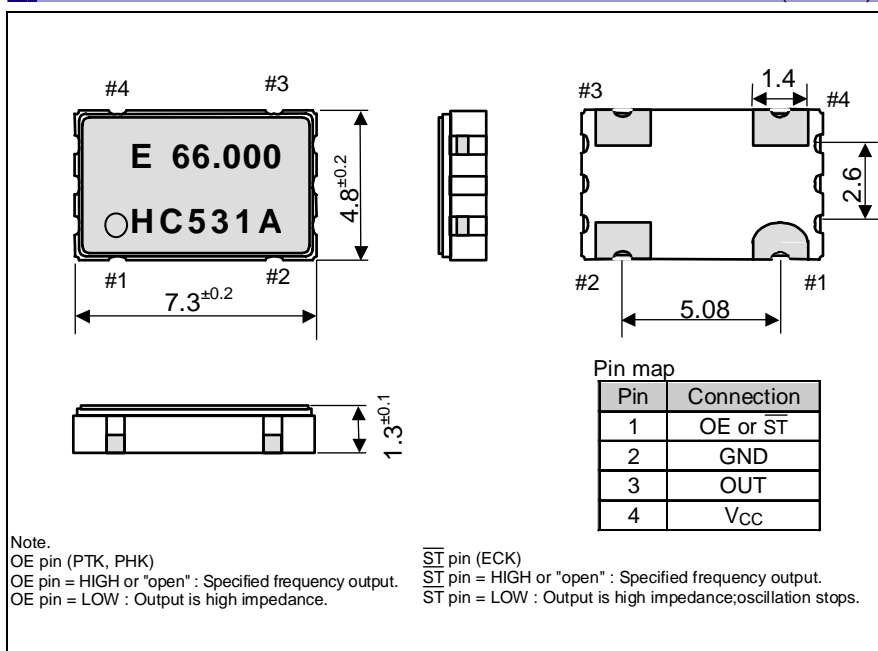


### Specifications (characteristics)

Item	Symbol	Specifications			Remarks
		SG-710PTK	SG-710PHK	SG-710ECK	
Output frequency range	$f_o$	1.8 MHz to 50 MHz	1.8 MHz to 80 MHz	1.8 MHz to 125 MHz	
Supply voltage	$V_{cc}$	5.0 V $\pm 0.5$ V			3.3 V $\pm 0.3$ V
Temperature range	Storage temperature	-55 °C to +125 °C			Store as bare product after unpacking
	Operating temperature	-10 °C to +70 °C, -40 °C to +85 °C			
Frequency tolerance	$f_{tol}(osc)$	S: $\pm 25 \times 10^{-6}$ , B: $\pm 50 \times 10^{-6}$ , C: $\pm 100 \times 10^{-6}$ L: $\pm 50 \times 10^{-6}$ , M: $\pm 100 \times 10^{-6}$			-10 °C to +70 °C -40 °C to +85 °C
Current consumption	$I_{cc}$	13 mA Max.	15 mA Max.	8 mA Max.	$f_o \leq 25$ MHz, No load condition. (ECK: $f_o \leq 32$ MHz)
		24 mA Max.	26 mA Max.	15 mA Max.	$f_o \leq 50$ MHz, No load condition
		—	34 mA Max.	18 mA Max.	$f_o \leq 67$ MHz, No load condition
		—	40 mA Max.	22 mA Max.	$f_o \leq 80$ MHz, No load condition
		—	—	30 mA Max.	$f_o \leq 125$ MHz, No load condition
Output disable current	$I_{dis}$	6 mA Max.	5 mA Max.	—	$f_o \leq 25$ MHz, OE=GND (PTK, PHK)
		12 mA Max.	10 mA Max.	—	$f_o \leq 50$ MHz, OE=GND (PTK, PHK)
		—	13 mA Max.	—	$f_o \leq 67$ MHz, OE=GND (PTK, PHK)
		—	16 mA Max.	—	$f_o \leq 80$ MHz, OE=GND (PTK, PHK)
Stand-by current	$I_{std}$	—	—	13 $\mu$ A Max.	$\overline{ST}$ =GND(ECK)
Symmetry	SYM	—	45 % to 55 %	45 % to 55 %	1.8 MHz $\leq f_o \leq 50$ MHz, $L_{CMOS}=15$ pF(ECK), 50 % $V_{cc}$
		45 % to 55 %	40 % to 60 %	40 % to 60 %	50 MHz $< f_o \leq 125$ MHz, $L_{CMOS}=15$ pF(ECK), 50 % $V_{cc}$
High output voltage	$V_{OH}$	2.4 V Min.	$V_{cc} - 0.5$ V Min.	90 % $V_{cc}$ Min.	$I_{OH} = -16$ mA(PTK,PHK); -2 mA(ECK)
Low output voltage	$V_{OL}$	0.4 V Max.	0.5 V Max.	10 % $V_{cc}$ Max.	$I_{OL} = 16$ mA(PTK,PHK), 2 mA(ECK)
Output load condition(TTL)	$L_{TTL}$	10 TTL Max.	10 TTL Max.	—	
Output load condition(CMOS)	$L_{CMOS}$	15 pF Max.	50 pF Max.	15 pF Max.	
Output enable / disable input voltage	$V_{IH}$	2.0 V Min.	2.0 V Min.	70 % $V_{cc}$ Min.	OE terminal (PTK, PHK)
	$V_{IL}$	0.8 V Max.	0.8 V Max.	30 % $V_{cc}$ Max.	$\overline{ST}$ terminal (ECK)
Output rise and fall time	$t_r / t_f$	—	5 ns Max.	6 ns Max.	CMOS load: 10 % $V_{cc}$ to 90 % $V_{cc}$ level
		5 ns Max.	—	—	TTL load: 0.4 V to 2.4 V level
Oscillation start up time	$t_{osc}$	10 ms Max.			Time at minimum supply voltage to be 0 s
Frequency aging	$f_{aging}$	$\pm 5 \times 10^{-6}$ / year Max.			+25 °C, $V_{cc}=5.0$ V / 3.3 V, First year.

### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit:mm)

