



CRYSTAL OSCILLATOR PROGRAMMABLE

SG - 8002CE series

- Frequency range : 1 MHz to 125 MHz
 - Supply voltage : 3.3 V or 5.0 V
 - Function : Output enable(OE) or Standby(\overline{ST})
 - Thickness : 1.05 mm Typ.
 - Short mass production lead time by PLL technology.
 - SG-Writer available to purchase.
- Please contact Epson Toyocom or local sales representative.



Actual size



Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks
		PT / ST	PH / SH	PC / SC	
Output frequency range	f_0	1 MHz to 125 MHz		—	Vcc=4.5 V to 5.5 V
		—	—	1 MHz to 125 MHz	Vcc=3.0 V to 3.6 V
		—	—	1 MHz to 66.7 MHz	Vcc=2.7 V to 3.6 V
Supply voltage	Vcc	4.5 V to 5.5 V		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 -20 °C to +70 °C (-40 °C to +85 °C)		-40 °C to +85 °C	Refer to "Outline specifications" (Frequency range)
Frequency tolerance	$f_{tol}(osc)$	B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$ M: $\pm 100 \times 10^{-6}$			-20 °C to +70 °C -40 °C to +85 °C *3
Current consumption	Icc	40 mA Max.		28 mA Max.	No load condition, Max. frequency
Output disable current	I_dis	30 mA Max.		16 mA Max.	OE=GND
Standby current	I_std	50 μ A Max.			\overline{ST} =GND(ST,SH,SC)
Symmetry *1	SYM	—	40 % to 60 %		CMOS load:50 % Vcc level, Max. load condition
		40 % to 60 %	—		TTL load: 1.4 V, Max. load condition
High output voltage	VoH	Vcc-0.4 V Min.			IoH=-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)
Low output voltage	VoL	0.4 V Max.			IoL=16 mA(PT,ST,PH,SH), 8 mA(PC,SC)
Output load condition (TTL) *1	L_TTL	5 TTL Max.	—		Max. frequency and Max. Supply voltage
Output load condition (CMOS) *1	L_CMOS	15 pF Max.			
Output enable / disable input voltage	VIH	2.0 V Min.		70 % Vcc Min.	\overline{ST} , OE terminal
	VIL	0.8 V Max.		20 % Vcc Max.	\overline{ST} , OE terminal
Output rise and fall time *1	tr/ tf	—	3 ns Max.		CMOS load: 20 % Vcc to 80 % Vcc level
		4 ns Max.	—		TTL load: 0.4 V to 2.4 V level
Oscillation start up time	tosc	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, Vcc=5.0 V/ 3.3 V (PC,SC) First year

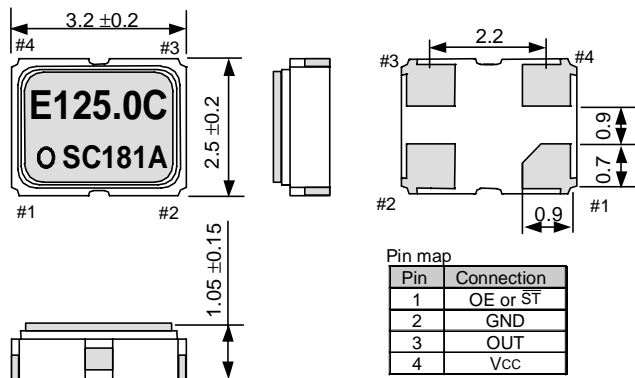
*1 Operating temperature (-40 °C to +85 °C), the available frequency, symmetry and output load conditions, please refer to "Outline specifications" page.

*2 PLL-PLL connection & Jitter specification, please refer to "Jitter specifications and characteristics chart" page.

*3 PT / ST and PH / SH for "M" tolerance will be available up to 27 MHz. Checking possible by the Frequency checking program.

External dimensions

(Unit:mm)



Note.
 OE Pin (PT, PH, PC)
 OE pin = "H" or "open" : Specified frequency output.
 OE pin = "L" : Output is high impedance.
 \overline{ST} pin (ST, SH, SC)
 \overline{ST} pin - "H" or "open" : Specified frequency output.
 \overline{ST} pin - "L" : Output is low level (weak pull - down), oscillation stops.

Footprint (Recommended) (Unit:mm)

