



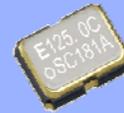
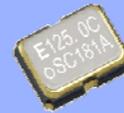
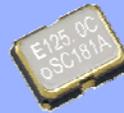
CRYSTAL OSCILLATOR PROGRAMMABLE

SG-8002CE series

- Frequency range : 1 MHz to 125 MHz
- Supply voltage : 3.3 V / 5.0 V
- Function : Output enable(OE) or Standby(\overline{ST})
- External dimensions : 3.2 × 2.5 × 1.05 t (mm) Typ.
- Short mass production lead time by PLL technology.
- SG-Writer available to purchase.
Please contact Epson Toyocom or local sales representative.



Product Number (please contact us)
Q3321CExxxxx00



Actual size



Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks	
		PT / ST	PH / SH	PC / SC		
Output frequency range	f_o	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				
Temperature range	Storage temperature	-40 °C to +125 °C			Store as bare product after unpacking	
	Operating temperature	-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}	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	
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	V _{OH}	Vcc-0.4 V Min.			I _{OH} =-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)	
Low output voltage	V _{OL}	0.4 V Max.			I _{OL} =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	V _{IH}	2.0 V Min.		70 % Vcc Min.	\overline{ST} terminal or OE terminal	
	V _{IL}	0.8 V Max.		20 % Vcc Max.		
Rise and Fall time *1	t _r / t _f	—			3 ns Max.	CMOS load: 20 % Vcc to 80 % Vcc level
		4 ns Max.		—		TTL load: 0.4 V to 2.4 V level
Start-up time	t _{str}	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	

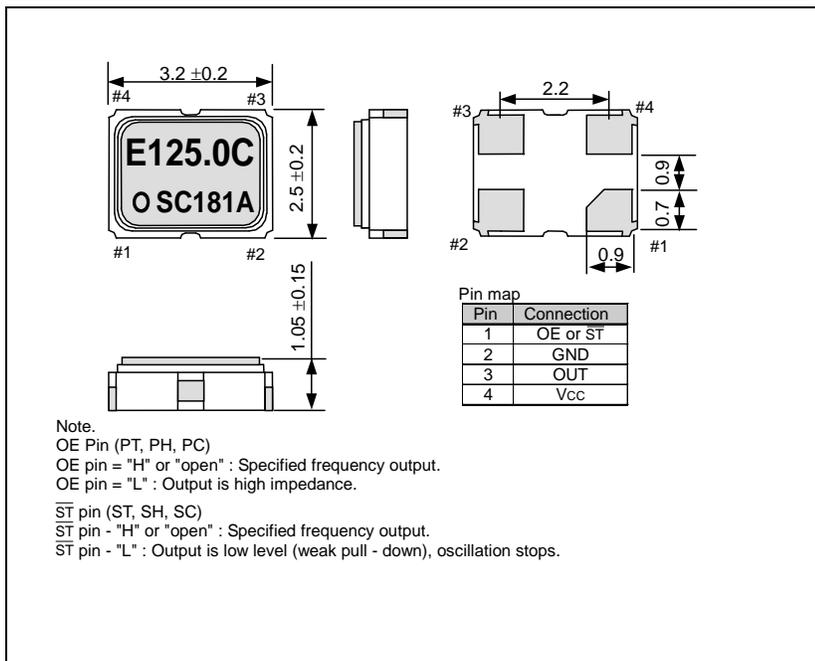
*1 Operating temperature (-40 °C to +85 °C), the available frequency, symmetry and output load conditions, please refer to "Outline specifications" page.

*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)



Footprint (Recommended) (Unit:mm)

