



# CRYSTAL OSCILLATOR PROGRAMMABLE

## SG-8002JF / CA 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 : 7.0 × 5.0 × 1.4 t (mm) ...SG-8002CA
- Pin compatible with ceramic package crystal oscillator (7 × 5)  
: SG-8002JF
- Short mass production lead time by PLL technology.
- SG-Writer available to purchase.  
Please contact Epson Toyocom or local sales representative.



CA Type

JF,CA Type

Product Number (please contact us)  
 SG-8002JF : Q3308JFxx1xxxx00  
 SG-8002CA : Q3309CAx0xxxx00



Actual size

SG-8002JF



SG-8002CA



### 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
Supply voltage	Vcc	4.5 V to 5.5 V		2.7 V to 3.6 V	Vcc=3.0 V to 3.6 V
		4.5 V to 5.5 V			2.7 V to 3.6 V
Temperature range	Storage temperature	-55 °C to +125 °C			Store as bare product after unpacking
	Operating temperature	T <sub>use</sub>	-20 °C to +70 °C (-40 °C to +85 °C)	-40 °C to +85 °C	Refer to "Outline specifications" (Frequency range)
Frequency tolerance	f <sub>tol</sub>	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	I <sub>cc</sub>	45 mA Max.		28 mA Max.	No load condition, Max. frequency range
Disable current	I <sub>dis</sub>	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)
Stand-by current	I <sub>std</sub>	50 $\mu$ A Max.			$\overline{ST}$ =GND(ST,SH,SC)
Symmetry*1	SYM	—		40 % to 60 %	CMOS load:50 % Vcc level, Max. load condition TTL load: 1.4 V level, Max. load condition
		40 % to 60 %	—		
High output voltage	V <sub>OH</sub>	Vcc-0.4 V Min.			I <sub>OH</sub> =-16 mA(PT / ST,PH / SH),-8 mA(PC / SC)
Low output voltage	V <sub>OL</sub>	0.4 V Max.			I <sub>OL</sub> =16 mA(PT / ST,PH / SH), 8 mA(PC / SC)
Output load condition (TTL) *1	L_TTL	5TTL Max.		—	f <sub>0</sub> ≤90 MHz,Max. supply voltage
Output load condition (CMOS) *1	L_CMOS	15 pF Max.	15 pF Max. (CA:25 pF Max.)	15 pF Max.	Max. frequency and Max. supply voltage
Output enable / disable input voltage	V <sub>IH</sub>	2.0 V Min.		70 % Vcc Min.	ST terminal or OE terminal
	V <sub>IL</sub>	0.8 V Max.		20 % Vcc Max.	
Rise time / Fall time *1	t <sub>r</sub> / t <sub>f</sub>	—		3 ns Max.	CMOS load: 20 % Vcc to 80 % Vcc level TTL load: 0.4 V to 2.4 V level
		4 ns Max.		—	
Start-up time	t <sub>str</sub>	10 ms Max.			Time at minimum supply voltage to be 0 s
Frequency aging	f <sub>aging</sub>	$\pm 5 \times 10^{-6}$ / 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.

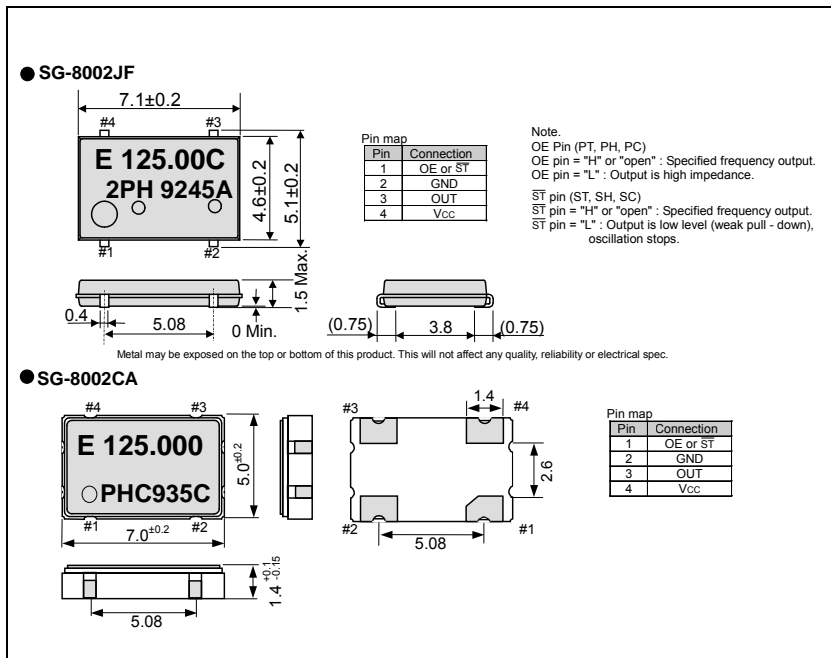
\*2 PLL-PLL connection & Jitter specification, please refer to "Jitter specifications and characteristics chart" page.

\*3 PT / ST and PH / SH for "M" tolerance will be available up to 55 MHz. (JF:40 MHz)

Checking possible by the Frequency Checking Program.

### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit:mm)

