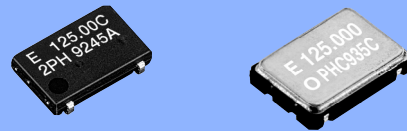


CRYSTAL OSCILLATOR PROGRAMMABLE

SG - 8002JF / CA 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 : 1.5 mm Max.
- Lead(Pb)-free : Contains high melting temperature type solder (Pb85 %) exempted by RoHS directive:SG-8002JF
Lead free completely: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.



Actual size

SG-8002JF



SG-8002CA



Specifications (characteristics)

Item		Symbol	Specifications *2			Remarks
			PT / ST	PH / SH	PC / SC	
Output frequency range		fo	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	-55 °C to +125 °C			Stored 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 “Frequency range” (P.4)
Frequency tolerance		F_tol(osc)	B: ±50 × 10 ⁻⁶ , C: ±100 × 10 ⁻⁶			-20 °C to +70 °C
			M: ±100 × 10 ⁻⁶			-40 °C to +85 °C *3
Current consumption		Icc	45 mA Max.		28 mA Max.	No load condition, Max. frequency range
Output disable current		I_dis	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)
Stand-by current		I_std	50 µA Max.			ST =GND(ST,SH,SC)
Symmetry*1		SYM	—	40 % to 60 %		CMOS load:50 % Vcc level, Max. load condition
			40 % to 60 %	—		TTL load: 1.4V level, 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	5TTL Max.	—		fosc90 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		VIH	2.0 V Min.		70 % Vcc Min.	ST , OE terminal
		VIL	0.8 V Max.		20 % Vcc Max.	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	±5 × 10 ⁻⁶ / year Max.			+25 °C, Vcc=5.0 V/ 3.3 V (PC / SC) First year

*1 Operating temperature ($-40\text{ }^{\circ}\text{C to }+85\text{ }^{\circ}\text{C}$), the available frequency, symmetry and output load conditions, please refer to Page 48.

*2 PLL-PLL connection & Jitter specification, please refer to Page 49.

*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.

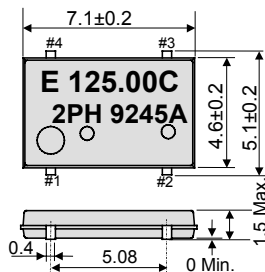
External dimensions

(Unit:mm)

Footprint (Recommended)

(Unit:mm)

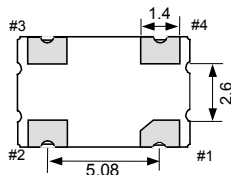
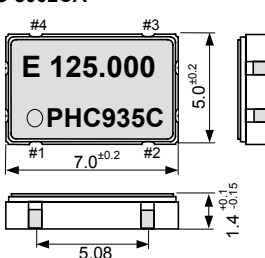
● SG-8002JF



Pin	Connection
1	OE or $\overline{ST}$
2	GND
3	OUT
4	V_{CC}

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.

● SG-8002CA



Pin	Connection
1	OE or $\overline{ST}$
2	GND
3	OUT
4	V_{CC}

