

PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR

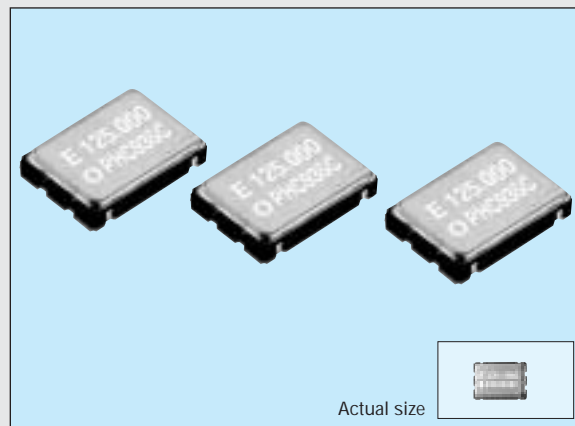
SG-8002CA series

Product number (please refer to page 1)

Q3309CAxxxxxx00

- Wide frequency output by PLL technology.
- Quick delivery of samples and short lead mass production time.
- Excellent environmental capability.
- Output enable function (OE) and stand-by function (ST) can be used for low current consumption applications.

8002 PROM Writer available to purchase.
Please contact EPSON or local sales representative.



Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks
		PT/ST	PH/SH	PC/SC	
Output frequency range	f_0	1.0000 MHz to 125.0000 MHz			Refer to page 33. "Frequency range"
Power source voltage	Max. supply voltage	V_{DD-GND} -0.5 V to +7.0 V			
	Operating voltage	V_{DD}	$5.0 V \pm 0.5 V$	$3.3 \pm 0.3 V$	2.7 V to 3.6 V: $f_0 \leq 66.7$ MHz(PC/SC)
Temperature range	Storage temperature	T_{STG} -55 °C to +125 °C			Stored as bare product after unpacking
	Operating temperature	T_{OPR}	-20 °C to +70 °C (-40 °C to +85 °C)	-40 °C to +85 °C	Refer to page 33."Frequency range"
Frequency stability	$\Delta f/f_0$	B: $\pm 50 \times 10^{-6}$ C: $\pm 100 \times 10^{-6}$ M: $\pm 100 \times 10^{-6}$			B,C: -20 °C to +70 °C, M: -40 °C to +85 °C
Current consumption	I_{OP}	45 mA Max.		28 mA Max.	No load condition, Max. frequency range
Output disable current	I_{OE}	30 mA Max.		16 mA Max.	OE=GND (PT, PH, PC)
Standby current	I_{ST}	50 μ A Max.			\overline{ST} =GND (ST, SH, SC)
Duty *1	t_w/t	40 % to 60 %			CMOS load: $1/2V_{DD}$ level
		40 % to 60 %	—		TTL load: 1.4 V level
High output voltage	V_{OH}	$V_{DD} - 0.4 V$ 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 *1 condition (fan out)	TTL	N	5 TTL Max.	—	Max. frequency and Max. operating voltage range
	CMOS	C_L	15 pF Max.	25 pF Max. 15 pF Max.	
Output enable/disable input voltage	V_{IH}	2.0 V Min.			\overline{ST} , OE terminal
	V_{IL}	0.8 V Max. 0.7 x V_{DD} Min. 0.2 x V_{DD} Max.			
Output rise time *1	CMOS level	t_{rLH}	4 ns Max.		CMOS load: 20 % \rightarrow 80 % V_{DD}
	TTL level	t_{rLH}	4 ns Max.		TTL load: 0.4 V \rightarrow 2.4 V
Output fall time *1	CMOS level	t_{fHL}	4 ns Max.		CMOS load: 80 % \rightarrow 20 % V_{DD}
	TTL level	t_{fHL}	4 ns Max.		TTL load: 2.4 V \rightarrow 0.4 V
Oscillation start up time	t_{OSC}	10 ms Max.			Time at minimum operating voltage to be 0 s
Aging	f_a	$\pm 5 \times 10^{-9}$ /year Max.			$T_a = +25$ °C, $V_{DD} = 5.0 V/3.3 V$, First year
Shock resistance	S.R.	$\pm 20 \times 10^{-6}$ Max.			Three drops on a hard board from 750 mm or excitation test with 29400 m/s ² x 0.3 ms x 1/2sine wave in 3 directions

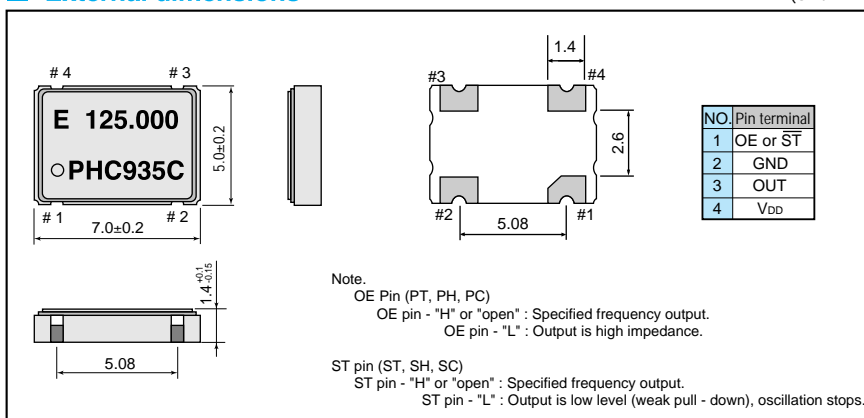
*1 Operating temperature(-40 °C to +85 °C), the available frequency, duty and output load conditions, please refer to page 33.

*2 PLL - PLL connection & Jitter specification, please refer to page 53, 54.
Checking possible by the Frequency Checking Program.

<http://www.epsondevice.com/domcfg.nsf>

External dimensions

(Unit: mm)



Recommended soldering pattern

(Unit: mm)

