

PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR

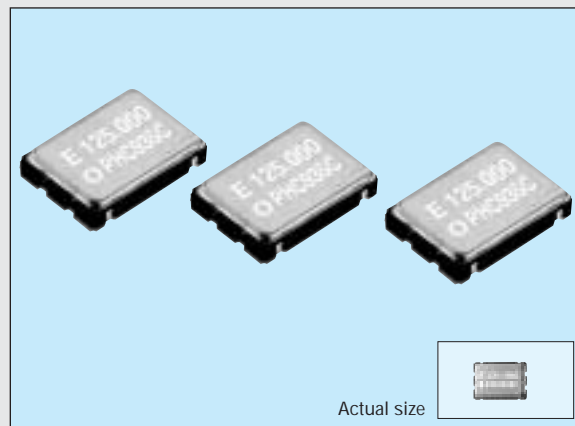
SG-8002CA series

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: 1/2 V_{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_{TLH} | 4 ns Max. | | CMOS load: 20 % \rightarrow 80 % V_{DD} |
| | TTL level | t_{TLH} | 4 ns Max. | | TTL load: 0.4 V \rightarrow 2.4 V |
| Output fall time *1 | CMOS level | t_{THL} | 4 ns Max. | | CMOS load: 80 % \rightarrow 20 % V_{DD} |
| | TTL level | t_{THL} | 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 |

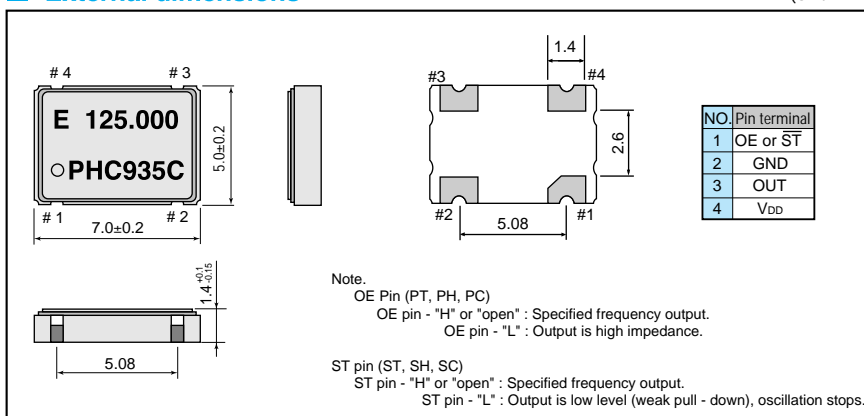
*1 Operating temperature(-40 °C to +85 °C), the available frequency, duty and output load conditions, please refer to page 33.

*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)

