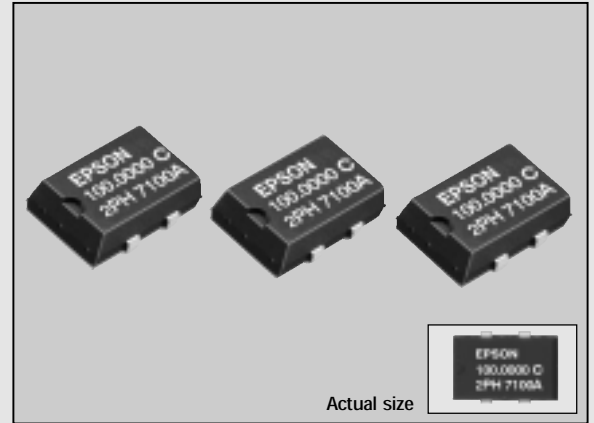


PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR

# SG-8002JA series

- Wide frequency output by PLL technology.
- Quick delivery of samples and short lead time by mass production.
- Excellent shock resistance and environmental capability.
- Output enable function (OE) and stand-by function (ST) can be used for low current consumption applications.
- Shape and pin compatible with SG-615.

Programming tool available.(Type:PRW-8000A3-M01)



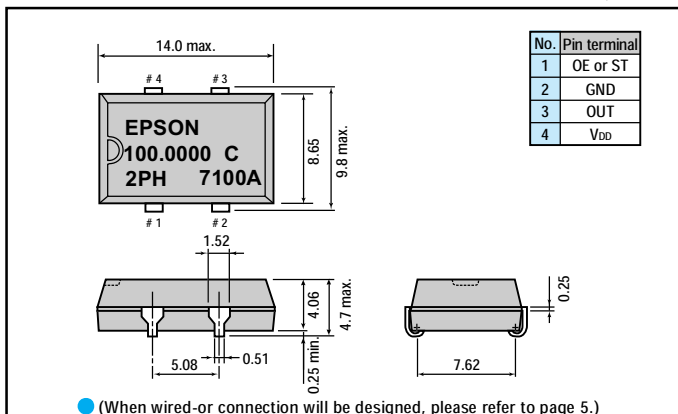
## Specifications (characteristics)

| Item                                | Symbol                | PT/ST  | PH/SH                           | PC/SC                      | Remarks   |
|-------------------------------------|-----------------------|--|---------------------------------|----------------------------|---|
|                                     |                       | Specifications   |                                 |                            |   |
| Output frequency range              | $f_0$                 | 1.0000 MHz to 125.0000 MHz                                       |                                 | 1.0000 MHz to 106.2500 MHz |   |
| Power source voltage                | Max. supply voltage   | $V_{DD-GND}$   | -0.5V to +7.0V                  |                            |   |
|                                     | Operating voltage     | $V_{DD}$   | 5.0V±0.5V                       | 3.3 ± 0.3V                 | 3.0V ±0.3V: $f_0 \leq 66.7$ MHz(PC/SC)  |
| Temperature range                   | Storage temperature   | $T_{STG}$  | -55°C to +125°C                 |                            |   |
|                                     | Operating temperature | $T_{OPR}$  | -20°C to +70°C (-40°C to +85°C) | -40°C to +85°C             | Refer to page 6."Frequency range"   |
| Soldering condition                 | $T_{SOL}$             | Twice at under 260°C within 10 sec. or under 230°C within 3 min. |                                 |                            |   |
| Frequency stability                 | $\Delta f/f_0$        | B: ±50ppm C: ±100ppm M: ±100ppm(-40°C to +85°C)                  |                                 |                            | -20°C to +70°C  |
| Current consumption                 | $I_{OP}$              | 45mA max.  |                                 | 28mA max.                  | No load condition, Max. frequency range   |
| Output disable current              | $I_{OE}$              | 30mA max.  |                                 | 16mA max.                  | OE=GND(PT, PH, PC)  |
| Standby current                     | $I_{ST}$              | 50µA max.  |                                 |                            | ST=GND(ST, SH, SC)  |
| Duty                                | $t_w/t$               | —  |                                 | 40% to 60%                 | C-MOS load: 1/2 $V_{DD}$ level  |
|                                     |                       | 40% to 60%   |                                 | —                          | TTL load: 1.4V level  |
| High output voltage                 | $V_{OH}$              | $V_{DD} - 0.4V$ min.   |                                 |                            | $I_{OH} = -16mA$ (PT/ST, PH/SH), $-8mA$ (PC/SC)   |
| Low output voltage                  | $V_{OL}$              | 0.4V max.  |                                 |                            | $I_{OL} = 16mA$ (PT/ST, PH/SH), $8mA$ (PC/SC)   |
| Output load condition (fan out)     | TTL                   | $N$  | 5TTL max.                       |                            | Max. frequency and max. operating voltage range   |
|                                     | C-MOS                 | $C_L$  | 15pF max.                       | 25pF max. 15pF max.        |   |
| Output enable/disable input voltage |                       | $V_{IH}$   | 2.0V min.                       |                            | ST, OE terminal   |
|                                     |                       | $V_{IL}$   | 0.8V max.                       |                            |   |
| Output rise time                    | C-MOS level           | $t_{rLH}$  | — 4ns max.                      |                            | C-MOS load: 20%→80% $V_{DD}$  |
|                                     | TTL level             | $t_{rLH}$  | 4ns max.                        |                            | TTL load: 0.4V→2.4V   |
| Output fall time                    | C-MOS level           | $t_{fHL}$  | — 4ns max.                      |                            | C-MOS load: 80%→20% $V_{DD}$  |
|                                     | TTL level             | $t_{fHL}$  | 4ns max.                        |                            | TTL load: 2.4V→0.4V   |
| Oscillation start up time           | $t_{OSC}$             | 10ms max.  |                                 |                            | Time at minimum operating voltage to be 0 sec.  |
| Aging                               | $f_a$                 | ±5ppm/year max.  |                                 |                            | $T_a = 25^\circ C$ , $V_{DD} = 5.0V/3.3V$ (PC/SC)   |
| Shock resistance                    | S.R.                  | ±20ppm max.  |                                 |                            | Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2sine wave in 3 directions |

Note: • Please contact us for inquiries about operating temperature(-40°C to +85°C), usable frequencies, duty and output load conditions. Checking possible by the Frequency Checking Program.

## External dimensions

(Unit: mm)



## Recommended soldering pattern

(Unit: mm)

