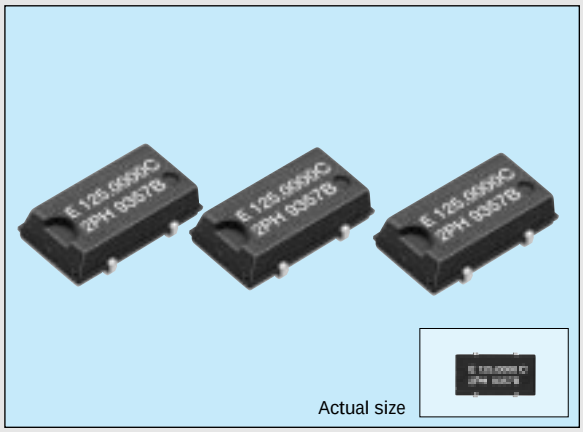
PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR

# SG-8002JC series

- Wide frequency output by PLL technology.
- Quick delivery of samples and short lead mass production time.
- Excellent shock resistance and environmental capability.
- Output enable function (OE) and stand-by function (ST) can be used for low current consumption applications.
- Package and pin compatible with SG-636.

8002 PROM Writer available to purchase.(Type:PRW-8000A3-M01)
Please contact EPSON or local sales representative.



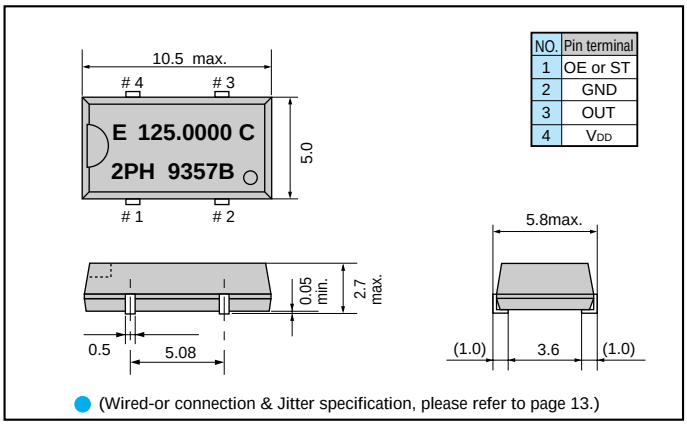

## Specifications (characteristics)

| Item | | Symbol | PT/ST | PH/SH | PC/SC | Remarks |
|---|---|---|---|---|---|---|
| | | | Specifications | | | |
| Output frequency range | | $f_0$ | 1.0000 MHz to 125.0000 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: $f_0 \leq$ 66.7MHz(PC/SC) |
| Temperature range | Storage temperature | $T_{STG}$ | -55°C to +100°C | | | |
| | Operating temperature | $T_{OPR}$ | -20°C to +70°C | | | Refer to page 4."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 | | | -20°C to +70°C |
| Current consumption | | Iop | 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. | | | |
| Output enable/disable input voltage | | $V_{IH}$ | 2.0V min. | | 0.7 × $V_{DD}$ min. | $\overline{ST}$, OE terminal |
| | | $V_{IL}$ | 0.8V max. | | 0.2 × $V_{DD}$ max. | |
| Output rise time | C-MOS level | $t_{TLH}$ | — | 4ns max. | | C-MOS load: 20%→80% $V_{DD}$ |
| | TTL level | | 4ns max. | — | | TTL load: 0.4V→2.4V |
| Output fall time | C-MOS level | $t_{THL}$ | — | 4ns max. | | C-MOS load: 80%→20% $V_{DD}$ |
| | TTL level | | 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 | | fa | ±5ppm/year max. | | | Ta= 25°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 usable frequencies, duty and output load conditions.
Checking possible by the Frequency Checking Program. http://www.epson.co.jp/CRYSTAL/
Metal may be exposed on the top of this product. This won't affect any quality, reliability or electrical spec.

## External dimensions

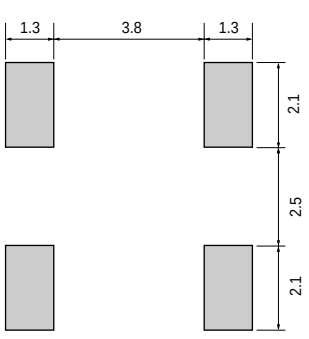
(Unit: mm)




● (Wired-or connection & Jitter specification, please refer to page 13.)

## Recommended soldering pattern

(Unit: mm)



# THE CRYSTALMASTER

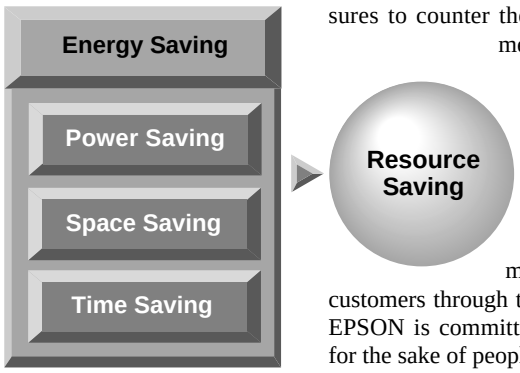
# ENERGY SAVING EPSON

EPSON offers effective savings to its customers through a wide range of electronic devices, such as semiconductors, liquid crystal display (LCD) modules, and crystal devices. These savings are achieved through a sophisticated melding of three different efficiency technologies.

Power saving technology provides low power consumption at low voltages.

Space saving technology provides further reductions in product size and weight through super-precise processing and high-density assembly technology.

Time saving technology shortens the time required for design and development on the customer side and shortens delivery times.




Our concept of Energy Saving technology conserves resources by blending the essence of these three efficiency technologies. The essence of these technologies is represented in each of the products that we provide to our customers.

In the industrial sector, leading priorities include measures to counter the greenhouse effect by reducing CO2, measures to preserve the global environment, and the development of energy-efficient products. Environmental problems are of global concern, and although the contribution of energy-saving technology developed by EPSON may appear insignificant, we seek to contribute to the development of energy-saving products by our customers through the utilization of our electronic devices. EPSON is committed to the conservation of energy, both for the sake of people and of the planet on which we live.

**SEIKO EPSON CORP. QUARTZ DEVICE DIVISION acquired ISO9001 and ISO14001 certification by B.V.Q.I. (Bureau Veritas Quality International) .**

**ISO9001 in October, 1992.**

**ISO14001 in November,1997.**