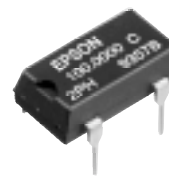


CRYSTAL OSCILLATOR
PROGRAMMABLE

SG-8002DC / DB 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})
Pin compatible with full size and half size.
- Short mass production lead time by PLL technology.
- SG-Writer available to purchase.



Actual size

SG-8002DC

SG-8002DB



Specifications (characteristics)

| Item | Symbol | Specifications *2 | | | Remarks | |
|---------------------------------------|---------------------------------|---|-------------------------------------|-------------------|--|---|
| | | PT / ST | PH / SH | PC / SC | | |
| Output frequency range | f_o | 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 | -55 °C to +125 °C | | | Store 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 "Outline specifications" (Frequency range) |
| Frequency tolerance | $f_{tol}(osc)$ | B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$ M: $\pm 100 \times 10^{-6}$ | | | -20 °C to +70 °C -40 °C to +85 °C *3 | |
| Current consumption | I _{cc} | 45 mA Max. | | 28 mA Max. | No load condition, Max. frequency | |
| Output disable current | I _{dis} | 30 mA Max. | | 16 mA Max. | OE=GND(PT,PH,PC) | |
| Stand-by current | I _{std} | 50 μ A Max. | | | \overline{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 | V _{OH} | Vcc-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 condition (TTL) *1 | L_TTL | 5 TTL Max. | | — | Max. frequency and Max. supply voltage | |
| Output load condition (CMOS) *1 | L_CMOS | 15 pF Max. | | 25 pF Max. | 15 pF Max. | |
| Output enable / disable input voltage | V _{IH} | 2.0 V Min. | | 70 % Vcc Min. | \overline{ST} , OE terminal | |
| | V _{IL} | 0.8 V Max. | | 20 % Vcc Max. | \overline{ST} , OE terminal | |
| Output rise and fall time *1 | t _r / t _f | — | | | 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 | t _{osc} | 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 °C to +85 °C), the available frequency, symmetry and output load conditions, please refer to "Outline specifications" page.

*2 PLL-PLL connection & Jitter specification, please refer to "Jitter specifications and characteristics chart" page.

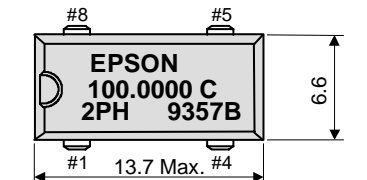
*3 PT / ST and PH / SH for "M" tolerance will be available up to 55 MHz.

Checking possible by the Frequency Checking Program.

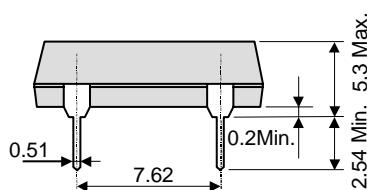
External dimensions

(Unit:mm)

● SG-8002DC



| Pin | Connection |
|-----|-----------------------|
| 1 | OE or \overline{ST} |
| 4 | GND |
| 5 | OUT |
| 8 | Vcc |



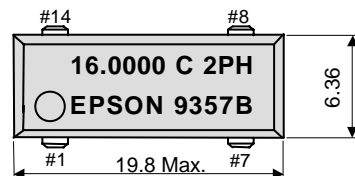
Note.

OE Pin (PT, PH, PC)

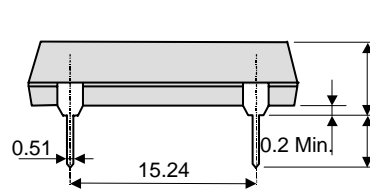
OE pin = "H" or "open" : Specified frequency output.

OE pin = "L" : Output is high impedance.

● SG-8002DB



| Pin | Connection |
|-----|-----------------------|
| 1 | OE or \overline{ST} |
| 7 | GND |
| 8 | OUT |
| 14 | Vcc |

 \overline{ST} pin (ST, SH, SC)

ST pin = "H" or "open" : Specified frequency output.

ST pin = "L" : Output is low level (weak pull - down), oscillation stops.