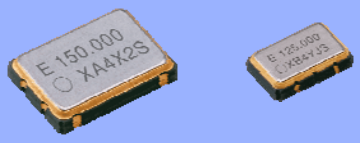
# CRYSTAL OSCILLATOR
## LOW-JITTER SAW OSCILLATOR

# XG-1000CA / CB series

- Output frequency range : 50 MHz to 170 MHz
- Supply voltage : 1.8 V / 2.5 V / 3.3 V
- Frequency tolerance : $\pm 50\times10^{-6}$, $\pm 100\times10^{-6}$
- Output : CMOS
- Function : Output enable(OE)
- Package size : CA:7.0×5.0×1.2 mm Typ.
  CB:5.0×3.2×1.1mm Typ.
- Low-jitter oscillator with SAW.

Pb Free RoHS Compliant

**Product Number (please contact us)**
**XG-1000CA: Q3851CA00xxxx00**
**XG-1000CB: Q3851CB00xxxx00**




Actual size

| XG-1000CA | XG-1000CB |
|---|---|
|  |  |

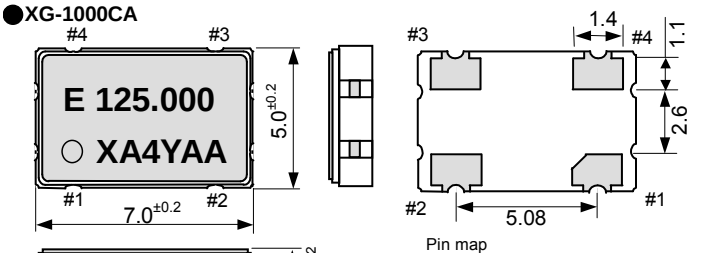
## Specifications (characteristics)

| Item | | Symbol | Specifications E | Specifications D | Specifications C | Remarks |
|---|---|---|---|---|---|---|
| Output frequency range *1 | | $f_0$ | 50.000 MHz to 170.000 MHz | | | |
| | | | 75.000 MHz, 98.304 MHz, 100.000 MHz, 106.250 MHz, 125.000 MHz, 150.000 MHz | | | Standard frequency |
| Supply voltage | | $V_{CC}$ | 1.8 V ±0.1V | 2.5 V ±0.125 V | 3.3 V ±0.3V | |
| Temperature range | Storage temperature | T_stg | -40 °C to +100 °C | | | Store as bare product after unpacking |
| | Operating temperature | T_use | -10°C to +70°C | | | |
| Frequency tolerance *2 | | f_tol | B:±50 × $10^{-6}$ C:±100 × $10^{-6}$ | | | -10 °C to +70 °C |
| Current consumption | | $I_{CC}$ | 20 mA Max. | 25 mA Max. | 35 mA Max. | No load condition, OE=$V_{CC}$ |
| Disable current | | I_dis | 15 mA Max. | 20 mA Max. | 30 mA Max. | OE=GND |
| Symmetry | | SYM | 40 % to 60 % | 45 % to 55 % | | fo≤ 125 MHz / CMOS load:50 % $V_{CC}$ level,Max.load condition |
| | | | 40 % to 60 % | | | fo> 125 MHz |
| High output voltage | | $V_{OH}$ | $V_{CC}$-0.35 V Min | | | E:$I_{OH}$ = -6 mA / C,D:$I_{OH}$ = -8 mA |
| Low output voltage | | $V_{OL}$ | 0.35 V Max. | | | E:$I_{OL}$ = 6 mA / C,D:$I_{OL}$ = 8 mA |
| Output load condition (CMOS) | | L_CMOS | 15 pF Max. | | | Max. frequency and Max. supply voltage range |
| Output enable/ Disable input voltage | | $V_{IH}$ | 70 % $V_{CC}$ Min. | | | OE terminal |
| | | $V_{IL}$ | 30 % $V_{CC}$ Max. | | | OE terminal |
| Rise time / Fall time | | $t_r$ / $t_f$ | 2 ns Max. | | | CMOS load :between 20% $V_{CC}$ and80%of $V_{CC}$ level |
| Start-up time | | t_str | 10 ms Max. | | | Time at minimum supply voltage to be 0 s |
| Jitter *3 | | $t_{RMS}$ | 3 ps Typ. | | | σ (RMS of total distribution) |
| | | $t_{p-p}$ | 25 ps Typ. | | | Peak to Peak |
| Frequency aging | | f_aging | ±5 × $10^{-6}$ / year Max. | | | +25 °C, First year, $V_{CC}$=1.8 V, 2.5 V, 3.3 V |

*1 Please contact us for inquiries regarding non-standard frequencies.
*2 This includes initial frequency tolerance, temperature variation, supply voltage variation and frequency tolerance vs. load.
*3 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

## External dimensions (Unit:mm)

●XG-1000CA

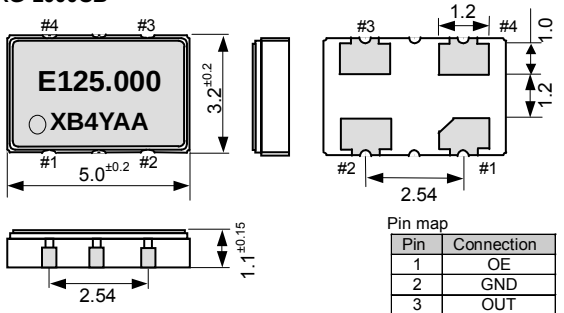



#2 is connected to the cover.

Pin map

| Pin | Connection |
|---|---|
| 1 | OE |
| 2 | GND |
| 3 | OUT |
| 4 | $V_{CC}$ |

●XG-1000CB



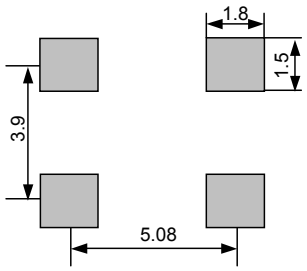

#2 is connected to the cover.

Pin map

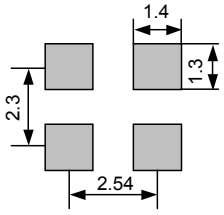
| Pin | Connection |
|---|---|
| 1 | OE |
| 2 | GND |
| 3 | OUT |
| 4 | Vcc |

## Footprint (Recommended) (Unit:mm)

●XG-1000CA




●XG-1000CB




To maintain stable operation, provide by-pass capacitor with more than 0.1 µF at a location as near as possible to the power source terminal of the crystal products (between $V_{CC}$ - GND).