

LOW-JITTER SAW OSCILLATOR (SPSO)
OUTPUT : CMOS

EG - 2021 / 2001CA

- Frequency range : 62.5 MHz to 250 MHz
- Supply voltage : 2.5 V ... EG-2021CA
3.3 V ... EG-2001CA
- Output : CMOS
- Function : Output enable (OE)
- External dimensions : 7.0 x 5.0 x 1.2 mm
- Very low jitter and low phase noise by SAW unit.



Product Number (please contact us)
EG-2021CA: Q3807CA00xxxx00
EG-2001CA: Q3801CA00xxxx00



Actual size



Specifications (characteristics)

| Item | Symbol | Specifications | | Conditions / Remarks | |
|------------------------------|---------------------------------|---|--------------------------|---|---|
| | | EG-2021CA | EG-2001CA | | |
| Output frequency range | f ₀ | 62.500 MHz to 170.000MHz | 170.001MHz to 250.000MHz | 106.250 MHz to 170.000 MHz | Please contact us about available frequencies. |
| Supply voltage | V _{cc} | 2.5 V ± 0.125 V | | 3.3 V ± 0.3 V | |
| Storage temperature | T _{stg} | -40 °C to +100 °C | | | Storage as single product. |
| Operating temperature | T _{use} | P: 0 °C to +70 °C R: -5 °C to +85 °C | | 0 °C to +70 °C | |
| Frequency tolerance | f _{tol} | G: ± 50 × 10 ⁻⁶ H: ± 100 × 10 ⁻⁶ | | Z: ± 50 × 10 ⁻⁶ Y,H: ± 100 × 10 ⁻⁶ | |
| Current consumption | I _{cc} | 25 mA Max. | 30 mA Max. | 50 mA Max. | OE=V _{cc} , No load condition |
| Disable current | I _{dis} | 600 μA Max. | | 10 μA Max. | OE=GND |
| Symmetry | SYM | 45 % to 55 % | 40 % to 60 % | 45 % to 55 % | 50 % V _{cc} level, L _{CMOS} ≤ Max. |
| Output voltage | V _{OH} | V _{cc} -0.35 V Min. | | V _{cc} -0.4 V Min. | I _{OH} = -8 mA |
| | V _{OL} | 0.35 V Max. | | 0.4 V Max. | I _{OL} = 8 mA |
| Output load condition (CMOS) | L _{CMOS} | 15 pF Max. | | | |
| Input voltage | V _{IH} | 70 % V _{cc} Min. | | | OE terminal |
| | V _{IL} | 30 % V _{cc} Max. | | | |
| Rise time / Fall time | t _r / t _f | 2 ns Max. | | | Between 20% V _{cc} and 80% V _{cc} level, L _{CMOS} ≤ Max. |
| Start-up time | t _{str} | 10 ms Max. | | | Time at minimum supply voltage to be 0 s |
| | t _{dj} | 0.2 ps Typ. | | | Deterministic Jitter |
| Jitter *1 | t _{rj} | 3 ps Typ. | | | Random Jitter |
| | t _{rms} | 3 ps Typ. | | | σ (RMS of total distribution) |
| | t _{p-p} | 25 ps Typ. | | | Peak to Peak |
| | t _{acc} | 4 ps Typ. | | | Accumulated Jitter(σ) n=2 to 50000 cycles |
| Phase Jitter | t _{pj} | 1 ps Max. | | | Offset frequency: 12 kHz to 20 MHz |
| Frequency aging | f _{aging} | ± 10 × 10 ⁻⁶ / year Max. | | ± 5 × 10 ⁻⁶ / year Max. | +25 °C, First year, V _{cc} =2.5 V,3.3 V |

*1 Tested using a DTS-2075 Digital timing system made by WAVECREST with jitter analysis software VISI6.

Product Name **EG-2021 CA 125.000000MHz C H P A** (ⓐⓑⓒⓓⓔⓕⓖⓗⓓ: GPA, GRA are not available)

(Standard form)

- ⓐ Model
- ⓑ Package type
- ⓒ Frequency
- ⓓ Output(C:CMOS)

- ⓔ Frequency tolerance
- ⓕ Operating temperature

- ⓖ Frequency aging (A*2: Frequency tolerance include aging, N*3: Frequency tolerance exclude aging)

| ⓔ Frequency tolerance | | ⓕ Operating temp. | |
|-----------------------|-------------------------|-------------------|-------------|
| G | ±50 × 10 ⁻⁶ | P | 0 to +70°C |
| H | ±100 × 10 ⁻⁶ | R | -5 to +85°C |

Product Name **EG-2001 CA 125.000000MHz P C H**

(Standard form)

- ⓐ Model
- ⓑ Package type
- ⓒ Frequency
- ⓓ Symmetry (P: 50±5%)
- ⓔ Supply voltage

- ⓕ Frequency tolerance / Operating temperature

| ⓔ Supply voltage | | ⓕ Frequency tolerance / Operating temperature | |
|------------------|------------|---|--------------------------------------|
| C | 3.3 V Typ. | H*2 | ±100 × 10 ⁻⁶ / 0 to +70°C |
| | | Y*3 | ±100 × 10 ⁻⁶ / 0 to +70°C |
| | | Z*4 | ±50 × 10 ⁻⁶ / 0 to +70°C |

*2 This includes initial frequency tolerance, temperature variation, supply voltage variation, load variation, reflow drift, and aging(+25 °C,10 years).

*3 This includes initial frequency tolerance, temperature variation, supply voltage variation, load variation, and reflow drift.(except aging)

*4 This includes initial frequency tolerance, and temperature variation.(except reflow drift, supply voltage variation, load variation and aging)

External dimensions

(Unit:mm)

Footprint (Recommended) (Unit:mm)

