



CRYSTAL OSCILLATOR

LOW-JITTER SAW OSCILLATOR

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 × 5.0 × 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

EG-2021CA



EG-2001CA



Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		EG-2021CA	EG-2001CA	
Output frequency range	f _o	62.500 MHz to 170.000MHz	170.001MHz to 250.000MHz	Please contact us for inquiries regarding available frequencies.
Supply voltage	V _{cc}	2.5 V± 0.125 V		
Storage temperature	T _{stg}	-40 °C to +100 °C		Store as bare product.
Operating temperature *1	T _{use}	P: 0 °C to +70 °C R: -5 °C to +85 °C		
Frequency tolerance *1	f _{tol}	G: ± 50 × 10 ⁻⁶ H: ± 100 × 10 ⁻⁶		
Current consumption	I _{cc}	25 mA Max.	30 mA Max.	OE=V _{cc} , No load condition
Disable current	I _{dis}	600 µA Max.		OE=GND
Symmetry	SYM	45 % to 55 %	40 % to 60 %	50 % V _{cc} level, L _{CMOS} ≤ Max.
Output voltage	V _{OH}	V _{cc} -0.35 V Min.		I _{OH} = -8 mA
	V _{OL}	0.35 V Max.		I _{OL} = 8 mA
Output load condition (CMOS)	L _{CMOS}	15 pF Max.		
	V _{IH}	70 % V _{cc} Min.		
Input voltage	V _{IL}	30 % V _{cc} Max.		OE terminal
	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
Jitter *2	t _{DJ}	0.2 ps Typ.		Deterministic Jitter
	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 *3	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 As per below table

*2 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

*3 Except: CHPA, CHRA, PCH

Model	EG-2021CA	
Aging	A *4	N *5
Frequency tolerance and operating temperature	HP: ±100×10 ⁻⁶ (0°C to +70°C)	CHPA
	HR: ±100×10 ⁻⁶ (-5°C to +85°C)	CHRA
	GP: ±50×10 ⁻⁶ (0°C to +70°C)	CGPN
	GR: ±50×10 ⁻⁶ (-5°C to +85°C)	CGRN

Model	EG-2001CA	
Symmetry	P: 50 ±5 %	
Frequency tolerance and operating temperature	H: ±100×10 ⁻⁶ (0°C to +70°C) *4	PCH
	Y: ±100×10 ⁻⁶ (0°C to +70°C) *5	PCY
	Z: ±50×10 ⁻⁶ (0°C to +70°C) *6	PCZ

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

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

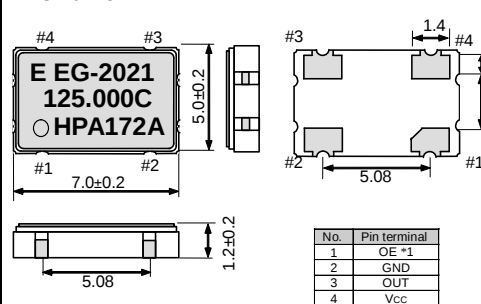
*6 This includes initial frequency tolerance, and temperature variation.(except reflow drift, supply voltage variation, load variation and aging)

External dimensions

(Unit:mm)

Footprint (Recommended) (Unit:mm)

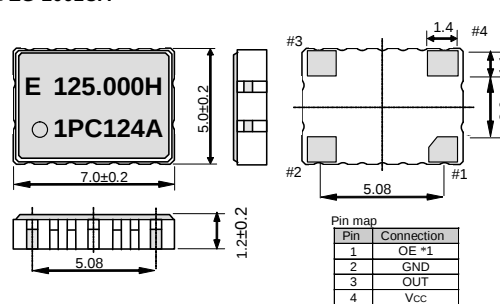
●EG-2021CA



*1 Standby function built-in
#2 is connected to the cover.

OE pin = HIGH : Specified frequency output.
OE pin = LOW : Output is high impedance

●EG-2001CA



*1 Standby function built-in
#2 is connected to the cover.

