

**LOW-JITTER SAW OSCILLATOR (SPSO)**  
**OUTPUT : LV-PECL**



Product Number  
**Q3803CA00xxxx00**

**EG-2101CA**

- Frequency range : 62.5 MHz to 99.999 MHz
- Supply voltage : 3.3 V
- Output : LV-PECL
- Function : Output enable (OE)
- External dimensions : 7.0 × 5.0 × 1.2 mm

•Very low jitter and low phase noise by SAW unit.



**Specifications (characteristics)**

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f <sub>o</sub>	62.500 MHz to 99.999 MHz	Please contact us about available frequencies.
Supply voltage	V <sub>CC</sub>	3.3 V ± 0.15 V	
Storage temperature	T <sub>stg</sub>	-40 °C to +100 °C	Storage as single product.
Operating temperature	T <sub>use</sub>	0 °C to +70 °C	
Frequency tolerance	f <sub>tol</sub>	Z: ±50 × 10 <sup>-6</sup> , H,Y: ±100 × 10 <sup>-6</sup>	
Current consumption	I <sub>CC</sub>	60 mA Max.	OE=V <sub>CC</sub> , L ECL=50 Ω
Disable current	I <sub>dis</sub>	25 mA Max.	OE=GND
Symmetry	SYM	D:47.5 % to 52.5 %	at outputs crossing point
Output voltage	V <sub>OH</sub> V <sub>OL</sub>	2.35 V Typ. V <sub>CC</sub> -1.025 V to V <sub>CC</sub> -0.88 V 1.60 V Typ. V <sub>CC</sub> -1.81 V to V <sub>CC</sub> -1.62 V	DC characteristics
Output load condition (ECL)	L <sub>ECL</sub>	50 Ω	Terminated to V <sub>CC</sub> -2.0 V
Input voltage	V <sub>IH</sub> V <sub>IL</sub>	70 % V <sub>CC</sub> Min. 30 % V <sub>CC</sub> Max.	OE terminal
Rise time / Fall time	t <sub>r</sub> / t <sub>f</sub>	600 ps Max.	Between 20 % and 80 % of (V <sub>OH</sub> -V <sub>OL</sub> )
Start-up time	t <sub>str</sub>	10 ms Max.	Time at minimum supply voltage to be 0 s
Jitter *1	t <sub>DJ</sub>	0.2 ps Typ.	Deterministic Jitter
	t <sub>RJ</sub>	3 ps Typ.	Random Jitter
	t <sub>RMS</sub>	3 ps Typ.	σ (RMS of total distribution)
	t <sub>p-p</sub>	25 ps Typ.	Peak to Peak
	t <sub>acc</sub>	4 ps Typ.	Accumulated Jitter(σ) n=2 to 50 000 cycles
Phase Jitter	t <sub>pj</sub>	0.8 ps Max.	f <sub>o</sub> < 100 MHz
		0.5 ps Max.	100 MHz ≤ f <sub>o</sub> < 200 MHz
		0.3 ps Max.	200 MHz ≤ f <sub>o</sub>
Frequency aging	f <sub>aging</sub>	± 5 × 10 <sup>-8</sup> / year Max.	+25 °C, First year, V <sub>CC</sub> =3.3 V

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

Product Name **EG-2101 CA 125.000000MHz D C H**  
 (Standard form) ① ② ③ ④⑤⑥

- ① Model ② Package type ③ Frequency
- ④ Symmetry (D: 50 ± 2.5%)
- ⑤ Supply voltage ⑥ Frequency tolerance / Operating temperature

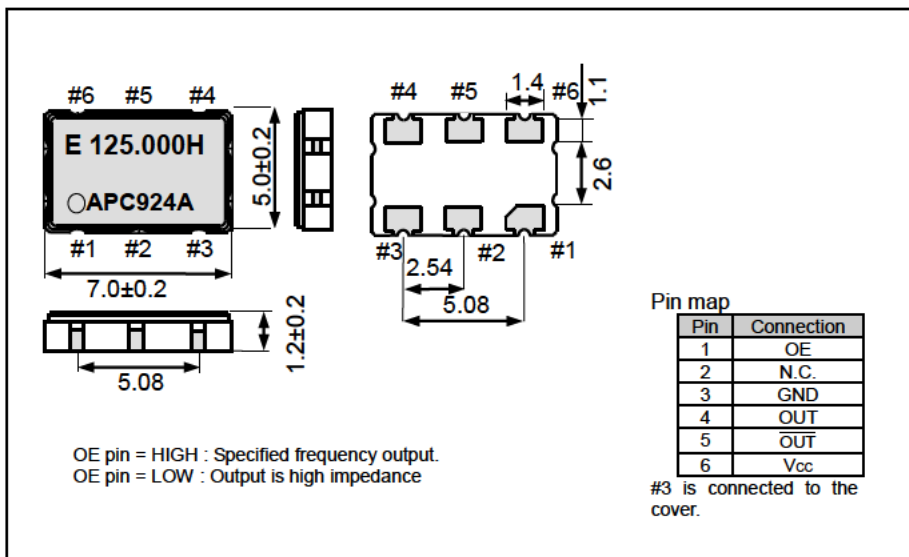
⑤ Supply voltage	
C	3.3 V Typ.

⑥ Frequency tolerance / Operating temperature	
H*2	±100 × 10 <sup>-6</sup> / 0 °C to +70 °C
Y*3	±100 × 10 <sup>-6</sup> / 0 °C to +70 °C
Z*4	±50 × 10 <sup>-6</sup> / 0 °C to +70 °C

- \*2 This includes initial frequency tolerance, temperature variation, supply voltage change, reflow drift, and aging(+25 °C, 10 years).
- \*3 This includes initial frequency tolerance, temperature variation, supply voltage change, and reflow drift(except aging).
- \*4 This includes initial frequency tolerance and temperature variation(except supply voltage change, reflow drift, aging).

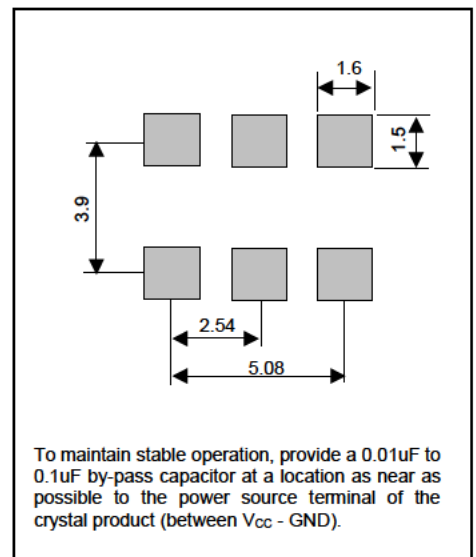
**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)



## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

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IATF 16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

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	► Pb free.
	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
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