

# CRYSTAL OSCILLATOR

## SPREAD SPECTRUM

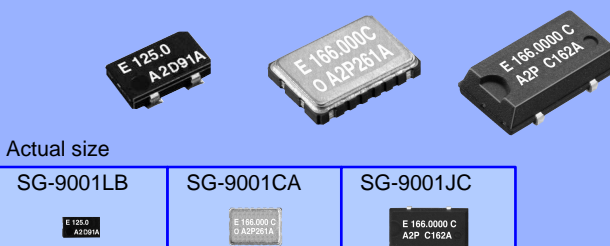
### OUTPUT : CMOS



Product Number (please contact us)  
**SG-9001LB: Q3331x2x0xxxx00**  
**SG-9001CA: Q3331x0x0xxxx00**  
**SG-9001JC: Q3331x1x2xxxx00**

## SG-9001LB / CA / JC series

- Frequency range : 10 MHz to 166 MHz
- Supply voltage : 3.3 V
- Function : Output enable(OE)
- External dimensions : 5.0 × 3.2 × 1.2 mm...SG-9001LB  
7.0 × 5.0 × 1.4 mm...SG-9001CA  
10.5 × 5.8 × 2.7 mm...SG-9001JC
- Range of spreading percentage is selectable by program  
( Center or Down spread, 6 Values )



### Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f <sub>o</sub>	10.000 MHz to 166.000 MHz	SG-9001JC, CA
		10.000 MHz to 135.000 MHz	SG-9001LB
Supply voltage	V <sub>cc</sub>	3.3 V ± 0.3 V	
Storage temperature	T <sub>stg</sub>	-55 °C to +100 °C -40 °C to +125 °C	SG-9001JC SG-9001LB, CA
Operating temperature	T <sub>use</sub>	-20 °C to +70 °C	
Current consumption	I <sub>cc</sub>	30 mA Max.	No load condition, f <sub>o</sub> = 166 MHz
Disable current	I <sub>dis</sub>	20 mA Max.	OE = GND, f <sub>o</sub> = 166 MHz
Symmetry	SYM	45 % to 55 %	CMOS load: 50 % V <sub>cc</sub> level, L <sub>CMOS</sub> = 15 pF
Output voltage	V <sub>OH</sub>	V <sub>cc</sub> - 0.4 V Min.	I <sub>OH</sub> = -8 mA
	V <sub>OL</sub>	0.4 V Max.	I <sub>OL</sub> = 8 mA
Output load condition	L <sub>CMOS</sub>	15 pF Max.	
Input voltage	V <sub>IH</sub>	70 % V <sub>cc</sub> Min.	OE terminal
	V <sub>IL</sub>	30 % V <sub>cc</sub> Max.	OE terminal
Rise time / Fall time	t <sub>r</sub> / t <sub>f</sub>	2.7 ns Max.	20 % V <sub>cc</sub> to 80 % V <sub>cc</sub> level, L <sub>CMOS</sub> = 15 pF.
Start-up time	t <sub>str</sub>	10 ms Max.	Time at minimum supply voltage to be 0 s
Frequency aging	f <sub>aging</sub>	±5 × 10 <sup>-6</sup> / year Max.	+25 °C, First year

Product Name **SG-9001LB 125.000000MHz C 05 P**

(Standard form)

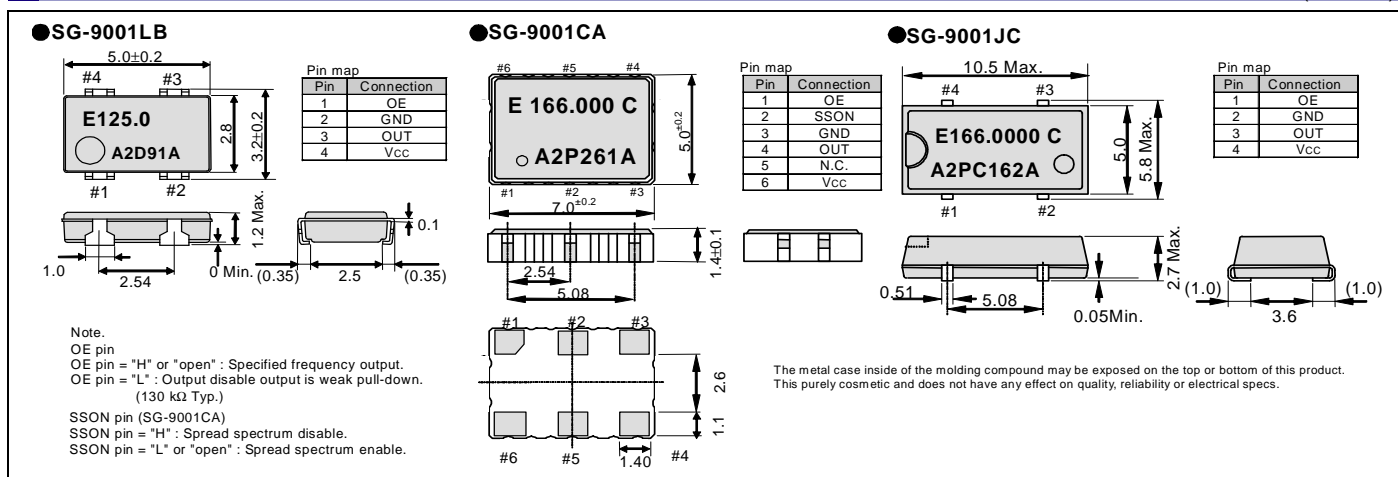
① ② ③ ④ ⑤ ⑥

①Model ②Package type ③Frequency ④Spread Type ⑤Modulated width(code) ⑥Function (P: Output enable)

C: Center Spread	Code	02	05	07	10	15	20
	Percentage	±0.25 %	±0.5 %	±0.75 %	±1.0 %	±1.5 %	±2.0 %
D: Down Spread	Code	05	10	15	20	30	40
	Percentage	-0.5 %	-1.0 %	-1.5 %	-2.0 %	-3.0 %	-4.0 %

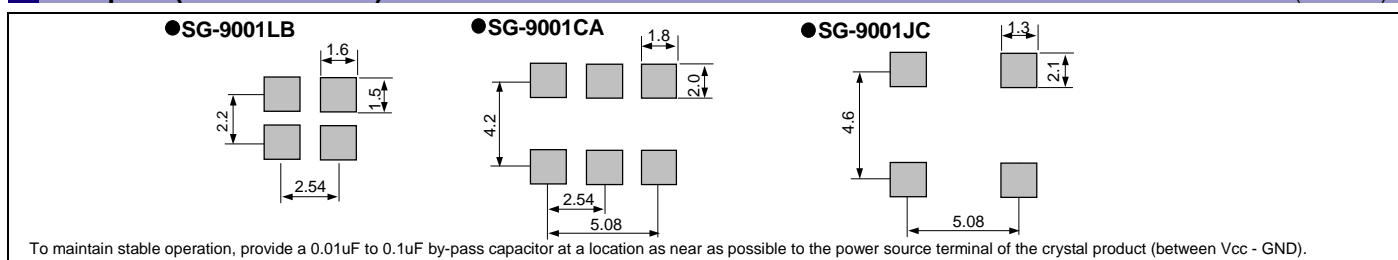
### External dimensions

(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.





## WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

### ► Explanation of the mark that are using it for the catalog

	► 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.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

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