

PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR WITH SPREAD SPECTRUM

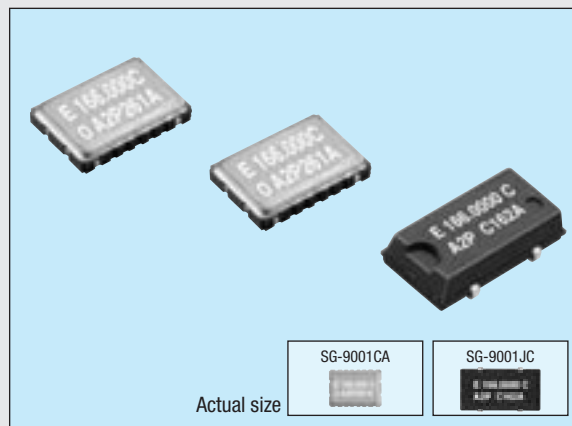
SG-9001CA/JC

Product number (please refer to page 2)

Q3331x0xxxxxx00

Q3331x1xxxxxx00

- Output frequency is selectable from 10 MHz to 166 MHz.
- Range of spreading percentage is selectable by program (Center or Down spread, 6 Values)
- Reflowable and high density mounting type SMD package.
- Operable 3.3 V.
- Output enable (OE) function allows more low current consumption.
- Optimized Spread Spectrum profile.
- Available for lead (Pb)-free soldering.
- Lead (Pb)-free terminal product. (SG-9001JC)
- Complete lead (Pb)-free product. (SG-9001CA)



Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	f _o	10.0000 MHz to 166.0000 MHz	Please contact us for inquiries about the available frequency
Power source voltage	Max. supply voltage	V _{DD} -GND	-0.5 V to +7.0 V
	Operating voltage	V _{DD}	3.3 ±0.3 V
Temperature range	Storage temperature	T _{STG}	-55 °C to +100 °C
			-40 °C to +125 °C
	Operating temperature	T _{OPR}	-20 °C to +70 °C
Current consumption	I _{OP}	30 mA Max.	No load condition, Max. frequency range.
Output disable current	I _{OE}	20 mA Max.	OE = GND, Max. frequency range
Duty	tw/t	45 % to 55 %	50 % V _{DD} , CL = 15 pF
High output voltage	V _{OH}	V _{DD} -0.4 V Min.	I _{OH} = -8 mA
Low output voltage	V _{OL}	0.4 V Max.	I _{OL} = 8 mA
Output load condition (fan out)	CMOS	CL	15 pF Max.
Output enable / disable input voltage	V _{IH}	0.7 V _{DD} Min.	Max. frequency and Max. operating voltage range
	V _{IL}	0.3 V _{DD} Max.	OE terminal
Output rise time	CMOS level	t _r	2.7 ns Max.
Output fall time	CMOS level	t _f	2.7 ns Max.
Oscillation start up time		t _{OSC}	10 ms Max.
Aging	fa	±5 x 10 ⁻⁶ / year Max.	Ta = +25 °C First year

Spread Spectrum Specifications

Center Spread	Code	C02P	C05P	C07P	C10P	C15P	C20P
	Percentage	±0.25%	±0.5%	±0.75%	±1.0%	±1.5%	±2.0%
Down Spread	Code	D05P	D10P	D15P	D20P	D30P	D40P
	Percentage	-0.5%	-1.0%	-1.5%	-2.0%	-3.0%	-4.0%

External dimensions

(Unit: mm)

● **SG-9001CA**

NO.	Pin terminal
1	OE
2	(SSON) *
3	GND
4	OUT
5	N.C.
6	VDD

● **SG-9001JC**

NO.	Pin terminal
1	OE
2	GND
3	OUT
4	VDD

Note:
 OE pin - "H" or "open" : Specified frequency output.
 OE pin - "L" : Output disable output is weak pull-down (130kΩ Typ.).
 SSON pin
 "H" : Spread spectrum disable.
 "L" or "open" : Spread spectrum enable.
 * SSON terminal should be kept open or GND.

Recommended soldering pattern

(Unit: mm)

● **SG-9001CA**

● **SG-9001JC**