



CRYSTAL OSCILLATOR SPREAD SPECTRUM

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 (t: Max.)...SG-9001LB
7.0 × 5.0 × 1.4 mm...SG-9001CA
- Range of spreading percentage is selectable by program
(Center or Down spread, 6 Values)



CA, LB Type



CA, LB, JC Type

Product Number (please contact us)

SG-9001LB: Q3331x2x0xxxx00

SG-9001CA: Q3331x0x0xxxx00

SG-9001JC: Q3331x1x2xxxx00



Actual size

SG-9001LB



SG-9001CA



SG-9001JC



Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	f_0	10.000 MHz to 166.000 MHz 10.000 MHz to 135.000 MHz	SG-9001JC, CA SG-9001LB Please contact us for inquiries regarding available frequencies.
Supply voltage	V _{cc}	3.3 V±0.3 V	
Storage temperature	T _{stg}	-55 °C to +100 °C -40 °C to +125 °C	SG-9001JC SG-9001LB, CA Store as bare product.
Operating temperature	T _{use}	-20 °C to +70 °C	
Current consumption	I _{cc}	30 mA Max.	No load condition, f_0 = 166 MHz
Disable current	I _{dis}	20 mA Max.	OE=GND, f_0 = 166 MHz
Symmetry	SYM	45 % to 55 %	CMOS load: 50 % V _{cc} level, L _{CMOS} =15 pF
Output voltage	V _{OH}	V _{cc} -0.4 V Min.	I _{OH} =8 mA
	V _{OL}	0.4 V Max.	I _{OL} =8 mA
Output load condition	L _{CMOS}	15 pF Max.	
Input voltage	V _{IH}	70 % V _{cc} Min.	OE terminal
	V _{IL}	30 % V _{cc} Max.	OE terminal
Rise time / Fall time	t _r / t _f	2.7 ns Max.	20 % V _{cc} to 80 % V _{cc} level, L _{CMOS} =15 pF.
Start-up time	t _{str}	10 ms Max.	Time at minimum supply voltage to be 0 s
Frequency aging	f _{aging}	±5 × 10 ⁻⁶ / year Max.	+25 °C, First year

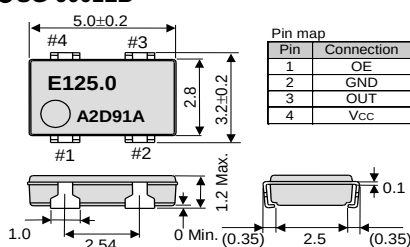
Spread Spectrum Specifications

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 %

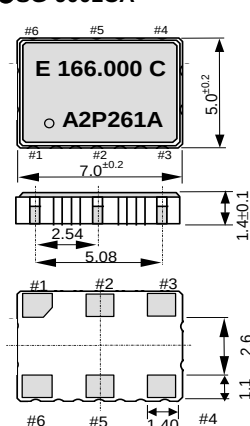
External dimensions

(Unit:mm)

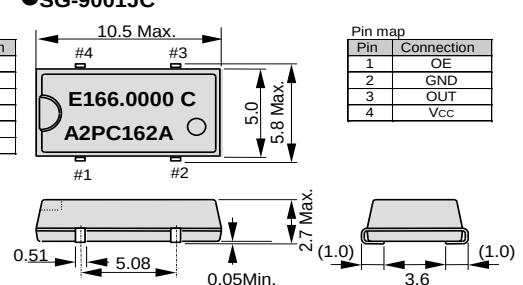
●SG-9001LB



●SG-9001CA



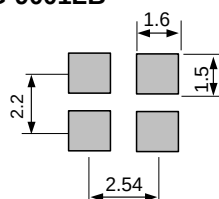
●SG-9001JC



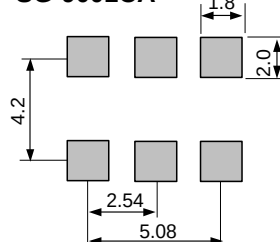
Footprint (Recommended)

(Unit:mm)

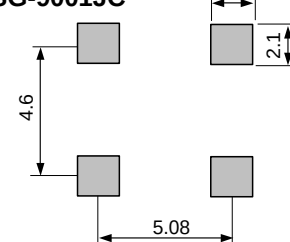
●SG-9001LB



●SG-9001CA



●SG-9001JC



To maintain stable operation, provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between V_{cc} - GND).