



LOW-JITTER SAW OSCILLATOR (SPSO) OUTPUT : CMOS

XG-1000CA / CB

- Output frequency range : 50 MHz to 170 MHz
- Supply voltage : 1.8 V / 2.5 V / 3.3 V
- Frequency tolerance : $\pm 50 \times 10^{-6}$, $\pm 100 \times 10^{-6}$
- Output : CMOS
- Function : Output enable (OE)
- External dimensions : CA: 7.0×5.0×1.2 mm
CB: 5.0×3.2×1.1 mm

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



Product Number (please contact us)
XG-1000CA: Q3851CA00xxxx00
XG-1000CB: Q3851CB00xxxx00



Actual size

XG-1000CA



XG-1000CB



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range *1	f_o	50.000 MHz to 170.000 MHz 75.000 MHz, 98.304 MHz, 100.000 MHz, 106.250 MHz, 125.000 MHz, 150.000 MHz	Standard frequency
Supply voltage	V_{CC}	E: 1.8 V ± 0.1 V D: 2.5 V ± 0.125 V C: 3.3 V ± 0.3 V	
Storage temperature	T_{stg}	-40 °C to +100 °C	Storage as single product.
Operating temperature	T_{use}	-10°C to +70°C	
Frequency tolerance *2	f_{tol}	B: $\pm 50 \times 10^{-6}$ C: $\pm 100 \times 10^{-6}$	
Current consumption	I_{CC}	20 mA Max. 25 mA Max. 35 mA Max.	OE= V_{CC} , No load condition
Disable current	I_{dis}	15 mA Max. 20 mA Max. 30 mA Max.	OE=GND
Symmetry	SYM	40 % to 60 % 45 % to 55 % 40 % to 60 %	$f_o \leq 125$ MHz 50 % V_{CC} level, $L_{CMOS} \leq$ Max. $f_o > 125$ MHz
Output voltage	V_{OH} V_{OL}	$V_{CC} - 0.35$ V Min. 0.35 V Max.	E: $I_{OH} = -6$ mA / C, D: $I_{OH} = -8$ mA E: $I_{OL} = 6$ mA / C, D: $I_{OL} = 8$ mA
Output load condition (CMOS)	L_{CMOS}	15 pF Max.	
Input voltage	V_{IH} V_{IL}	70 % V_{CC} Min. 30 % V_{CC} Max.	OE terminal
Rise time / Fall time	t_r / t_f	2 ns Max.	Between 20% V_{CC} and 80% V_{CC} level, $L_{CMOS} \leq$ Max
Start-up time	t_{str}	10 ms Max.	Time at minimum supply voltage to be 0 s
Jitter *3	t_{RMS} t_{p-p}	3 ps Typ. 25 ps Typ.	σ (RMS of total distribution) Peak to Peak
Frequency aging	f_{aging}	$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, First year, $V_{CC} = 1.8$ V, 2.5 V, 3.3 V

*1 Please contact us for requirements non-standard frequencies.

*2 This includes initial frequency tolerance, temperature variation, supply voltage variation and load variation.

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

Product Name XG-1000 CA 150.000000MHz D B
(Standard form) ① ② ③ ④ ⑤
① Model ② Package type ③ Frequency
④ Supply voltage
⑤ Frequency tolerance / Operating temperature

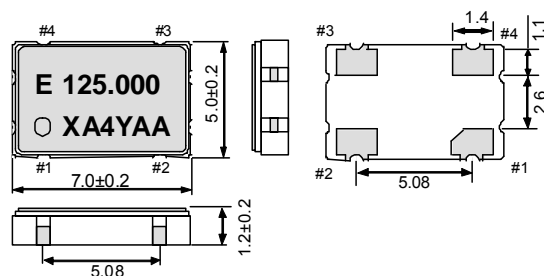
④ Supply voltage	
C	3.3 V Typ.
D	2.5 V Typ.
E	1.8 V Typ.

⑤ Frequency tolerance	
B	$\pm 50 \times 10^{-6}$ / -10 to +70°C
C	$\pm 100 \times 10^{-6}$ / -10 to +70°C

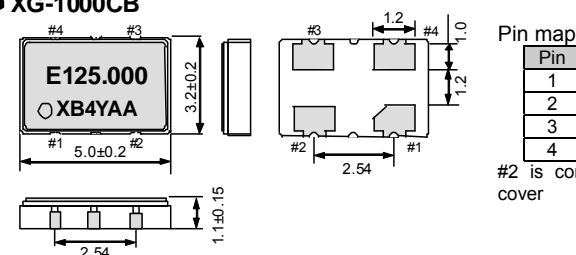
External dimensions

(Unit:mm)

● XG-1000CA



● XG-1000CB



Pin map

Pin	Connection
1	OE
2	GND
3	OUT
4	Vcc

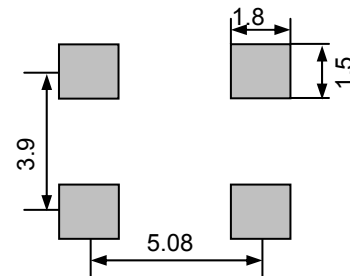
#2 is connected to the cover

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

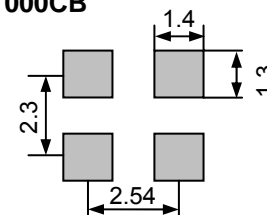
Footprint (Recommended)

(Unit:mm)

● XG-1000CA



● XG-1000CB



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

PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

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

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