



CRYSTAL OSCILLATOR

LOW-JITTER SAW OSCILLATOR

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)
- Package size : CA: 7.0 $\times$ 5.0 $\times$ 1.2 mm
CB: 5.0 $\times$ 3.2 $\times$ 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	
		E	D	C		
Output frequency range *1	f _o	50.000 MHz to 170.000 MHz			Standard frequency	
		75.000 MHz, 98.304 MHz, 100.000 MHz, 106.250 MHz, 125.000 MHz, 150.000 MHz				
Supply voltage	V _{cc}	1.8 V ±0.1V	2.5 V ±0.125 V	3.3 V ±0.3V		
Storage temperature	T _{stg}	-40 °C to +100 °C			Store as bare product.	
Operating temperature	T _{use}	-10°C to +70°C				
Frequency tolerance *2	f _{tol}	B:±50 × 10 ⁻⁶ C:±100 × 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 %		f _{os} 125 MHz	50 % V _{cc} level, L _{CMOS} ≤ Max.
			40 % to 60 %		f _o > 125 MHz	
Output voltage	V _{OH}	V _{cc} -0.35 V Min			E:I _{OH} = -6 mA / C,D:I _{OH} = -8 mA	
	V _{OL}	0.35 V Max.			E:I _{OL} = 6 mA / C,D:I _{OL} = 8 mA	
Output load condition (CMOS)	L _{CMOS}	15 pF Max.				
Input voltage	V _{IH}	70 % V _{cc} Min.			OE terminal	
	V _{IL}	30 % V _{cc} Max.				
Rise time / Fall time	t _r / t _f	2 ns Max.			Between 20% V _{cc} and 80% V _{cc} level, L _{CMOS} ≤ Max	
Start-up time	t _{str}	10 ms Max.			Time at minimum supply voltage to be 0 s	
Jitter *3	t _{RMS}	3 ps Typ.			σ (RMS of total distribution)	
	t _{p-p}	25 ps Typ.			Peak to Peak	
Frequency aging	f _{aging}	±5 × 10 ⁻⁶ / year Max.			+25 °C, First year, V _{cc} =1.8 V, 2.5 V, 3.3 V	

*1 Please contact us for inquiries regarding non-standard frequencies.

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

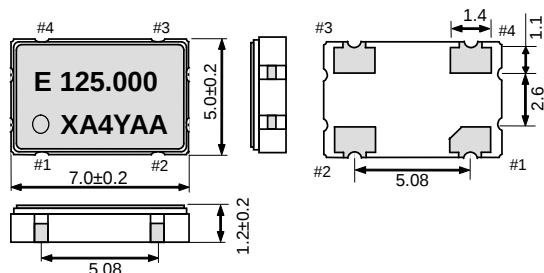
*3 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

Operating voltage		E: 1.8V	D: 2.5V	C: 3.3V
Frequency tolerance and operating temperature	B: $\pm 50 \times 10^{-6}$, (-10 °C to +70 °C) C: $\pm 100 \times 10^{-6}$, (-10 °C to +70 °C)	EB EC	DB DC	CB CC

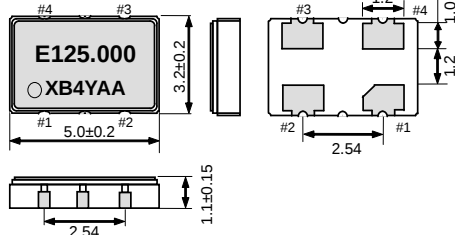
External dimensions

(Unit:mm)

● XG-1000CA



● XG-1000CB



Pin map

Pin	Connection
1	OE
2	GND
3	OUT
4	V _{cc}

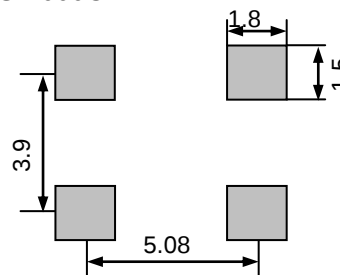
OE pin = HIGH : Specified frequency output.
OE pin = LOW : Output is high impedance

#2 is connected to the cover

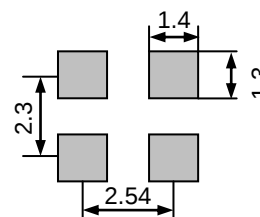
Footprint (Recommended)

(Unit:mm)

● XG-1000CA



● XG-1000CB



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).