

**LOW-JITTER SAW OSCILLATOR (SPSO)**

**OUTPUT : LV-PECL, LVDS**  
For high temperature environment



Product Number

**XG-2103CA P: X1M000321xxxx00**  
**XG-2103CA L: X1M000361xxxx00**

**XG-2103CA**

- Frequency range : 100 MHz to 700 MHz
- Supply voltage : 3.3 V
- Output : LV-PECL or LVDS
- Function : Output enable (OE)
- External dimensions : 7.0 × 5.0 × 1.2 mm

•Low jitter and low phase noise by SAW unit.



**Specifications (characteristics)**

Item	Symbol	LV-PECL	LVDS	Conditions / Remarks
Output frequency range	fo	100 MHz to 700 MHz		Please contact us about available frequencies.
Supply voltage	V <sub>CC</sub>	3.3 V ± 0.33 V		
Storage temperature	T <sub>stg</sub>	-55 °C to +125 °C		Storage as single product.
Operating temperature	T <sub>use</sub>	P: 0 °C to +70 °C, R: -5 °C to +85 °C, S: -20 °C to +70 °C		
Frequency tolerance	f <sub>tol</sub>	H: ±100 × 10 <sup>-6</sup>		
Current consumption	I <sub>CC</sub>	60 mA Max.	30 mA Max.	OE=V <sub>CC</sub> , L_ECL=50 Ω or L_LVDS=100 Ω
Disable current	I <sub>dis</sub>	2 mA Max.	15 mA Max.	OE=GND
Symmetry	SYM	45 % to 55 %		At outputs crossing point
Output voltage (LV-PECL)	V <sub>OH</sub>	2.35 V Typ. V <sub>CC</sub> -1.025 V to V <sub>CC</sub> -0.88 V	-	DC characteristics
	V <sub>OL</sub>	1.60 V Typ. V <sub>CC</sub> -1.81 V to V <sub>CC</sub> -1.62 V	-	
	V <sub>OD</sub>	-	350 mV Typ. 247 mV to 454 mV	
Output voltage (LVDS)	dV <sub>OD</sub>	-	50 mV Max.	DC characteristics
	V <sub>OS</sub>	-	1.25 V Typ. 1.125 V to 1.375 V	
	dV <sub>OS</sub>	-	150 mV Max.	
Output load condition (ECL) / (LVDS)	L_ECL	50 Ω	-	Terminated to V <sub>CC</sub> -2.0 V
	L_LVDS	-	100 Ω	Connected between OUT to OUT
Input voltage	V <sub>IH</sub>	70 % V <sub>CC</sub> Min.		OE terminal
	V <sub>IL</sub>	30 % V <sub>CC</sub> Max.		
Rise time / Fall time	tr / tf	400 ps Max.		Between 20 % and 80 % of (V <sub>OH</sub> -V <sub>OL</sub> ). Between 20 % and 80 % of Differential Output Peak to Peak voltage.
Start-up time	t <sub>str</sub>	10 ms Max.		Time at minimum supply voltage to be 0 s
Phase Jitter	t <sub>PJ</sub>	0.23 ps Max.	0.27 ps Max.	100 MHz ≤ fo < 150 MHz
		0.22 ps Max.	0.24 ps Max.	150 MHz ≤ fo < 200 MHz
		0.21 ps Max.	0.23 ps Max.	200 MHz ≤ fo < 300 MHz
		0.18 ps Max.	0.19 ps Max.	300 MHz ≤ fo < 400 MHz
		0.16 ps Max.	0.16 ps Max.	400 MHz ≤ fo < 500 MHz
		0.14 ps Max.	0.14 ps Max.	500 MHz ≤ fo < 600 MHz
		0.10 ps Max.	0.10 ps Max.	600 MHz ≤ fo ≤ 700 MHz
Frequency aging	f <sub>age</sub>	H: Included in Frequency tolerance		Max operating temperature, 5 years, V <sub>CC</sub> = 3.3 V

Product Name **XG-2103CA 156.250000MHz P H R H**

(Standard form)

- ① Model    ② Package type    ③ Frequency  
④ Output(P:LV-PECL, L:LVDS)  
⑤ Frequency tolerance    ⑥ Operating temperature  
⑦ Frequency aging (H<sup>1</sup>: Frequency tolerance include aging)

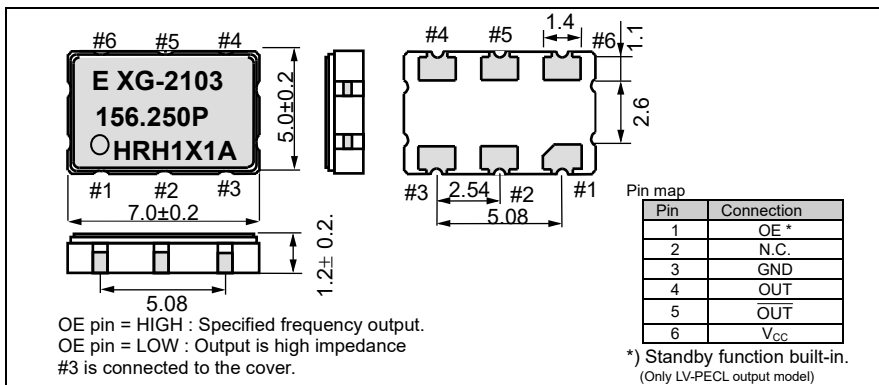
⑤ Frequency tolerance	
H	±100 × 10 <sup>-6</sup>

⑥ Operating temp.	
P	0 °C to +70 °C
R	-5 °C to +85 °C
S	-20 °C to +70 °C

\*1 This includes initial frequency tolerance, temperature variation, supply voltage change, reflow drift and estimation of 5 years aging at max operating temperature.

**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)

