

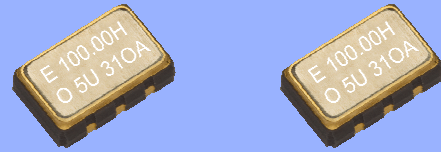
LOW-JITTER SAW OSCILLATOR (SPSO)
OUTPUT : HCSSL



Product Number (please contact us)
X1M000461xxxx00

XG5032HAN

- Frequency range : 100 MHz to 200 MHz
- Supply voltage : 2.5 V, 3.3 V
- Output : HCSSL
- Function : Output enable (OE)
- External dimensions : 5.0 × 3.2 × 1.4 mm
- Low jitter and low phase noise by SAW unit.



Actual size



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f ₀	100 MHz to 200 MHz	Please contact us for inquiries regarding available frequencies.
Supply voltage	V _{cc}	C:3.3 V ±0.33 V, D:2.5 V ±0.125 V	
Storage temperature	T _{stg}	-55 °C to +125 °C	Store as bare product.
Operating temperature	T _{use}	A:0 °C to +70 °C, B:-20 °C to +70 °C, D:-5 °C to +85 °C	
Frequency tolerance	f _{tol}	J: ±50 × 10 ⁻⁶ , L: ±100 × 10 ⁻⁶	
Current consumption	I _{cc}	35 mA Max.	OE=V _{cc} , with output load
Disable current	I _{dis}	15 mA Max.	OE=GND
Symmetry	SYM	45 % to 55 %	At outputs crossing point
Output voltage	V _{OH} V _{OL}	0.75 V Typ., 0.66 V to 0.85 V 0 V Typ., -0.15 V to 0.15 V	DC characteristics, single output
Crossing voltage	V _{CR}	0.25 V to 0.55 V	
Output load condition	L _{HCSSL}	50 Ω	As per measurement circuit below.
	R _s	33 Ω	
	C _L	2 pF	
Input voltage	V _{IH}	70 % V _{cc} Min.	OE terminal
	V _{IL}	30 % V _{cc} Max.	
differential output rise slew rate/fall slew rate	R _r / R _f	1 V/n to 4 V/ns	Between -0.15 V and 0.15 V of differential output
Start-up time	t _{str}	10 ms Max.	Time at minimum supply voltage to be 0 s
Phase Jitter	tp _J	0.3 ps Max.	f ₀ ≤ 160 MHz
		0.4 ps Max.	160 MHz < f ₀ ≤ 175 MHz
		0.2 ps Max.	f ₀ > 175 MHz
Frequency aging	f _{aging}	N: ±10 × 10 ⁻⁶ / year Max.	First year
		A: Included in Frequency tolerance	10 years

Product Name **XG5032 HAN 100.000000MHz C J A A** (ⓐⓑⓒ:JBA,JDA are not available)

① Model ② Output(H: HCSSL) ③ Frequency

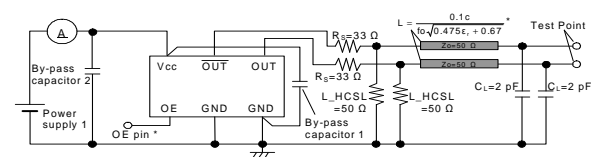
④ Supply voltage (C: 3.3 V Typ., D: 2.5 V Typ.) ⑤ Frequency tolerance ⑥ Operating temperature

⑦ Frequency aging (A: Frequency tolerance include aging, N: Frequency tolerance exclude aging)

ⓐ Frequency tolerance	
J	±50 × 10 ⁻⁶
L	±100 × 10 ⁻⁶

ⓑ Operating temp.	
A	0 to +70°C
B	-20 to +70°C
D	-5 to +85°C

Measurement circuit



By-pass capacitor 1 (approx. 0.01μF to 0.1 μF) places closely between V_{cc} and GND.
By-pass capacitor 2 (approx. 10 μF) places closely between power supply terminals on the board.
Output line length L is estimated as follows

$$L = \frac{0.1c}{f_o \sqrt{0.475\epsilon_r + 0.67}}$$

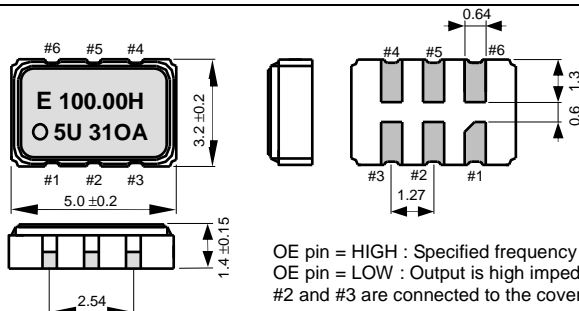
c : Velocity of light in a vacuum
ε_r : Relative dielectric constant of the board
f_o : Output frequency

External dimensions

(Unit:mm)

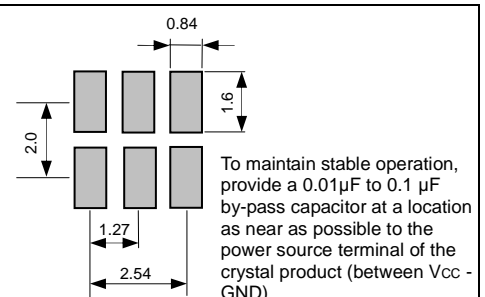
Footprint (Recommended)

(Unit:mm)



Pin map

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



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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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