



# CRYSTAL OSCILLATOR (SPXO)

OUTPUT : LV-PECL, LVDS



**Product Number**  
 SG3225EAN: X1G004251xxxx00  
 SG3225VAN: X1G004241xxxx00  
 SG5032EAN: X1G004271xxxx00  
 SG5032VAN: X1G004261xxxx00  
 SG7050EAN: X1G004291xxxx00  
 SG7050VAN: X1G004281xxxx00

# SG3225EAN / VAN SG5032EAN / VAN SG7050EAN / VAN

- Achieved wide frequency range by PLL technology and Fundamental AT crystal units
- Frequency range : 73.5 MHz to 700 MHz
- Supply voltage : 2.5 V to 3.3 V
- Function : Output enable (OE)
- Output : LV-PECL or LVDS



## Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		LV-PECL SG3225EAN / SG5032EAN / SG7050EAN	LVDS SG3225VAN / SG5032VAN / SG7050VAN	
Output frequency range	f <sub>o</sub>	73.5 MHz to 700 MHz		Please contact us about available frequencies.
Supply voltage	V <sub>cc</sub>	K: 2.5 V - 10 % to 3.3 V + 10 %		
Storage temperature	T <sub>stg</sub>	-40 °C to +125 °C		Storage as single product.
Operating temperature	T <sub>use</sub>	B: -20 °C to +70 °C, G: -40 °C to +85 °C		
Frequency tolerance	f <sub>tol</sub>	J: ±50 × 10 <sup>-6</sup> , E: ±30 × 10 <sup>-6</sup> , C: ±20 × 10 <sup>-6</sup>		
Current consumption	I <sub>cc</sub>	65 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>	20 mA Max.		OE = GND
Symmetry	SYM	45 % to 55 %		At outputs crossing point
Output voltage (LV-PECL)	V <sub>OH</sub>	V <sub>cc</sub> - 1.0 V to V <sub>cc</sub> - 0.8 V	-	DC characteristics
	V <sub>OL</sub>	V <sub>cc</sub> - 1.78 V to V <sub>cc</sub> - 1.62 V	-	
Output voltage (LVDS)	V <sub>OD</sub>	-	250 mV to 450 mV	DC characteristics
	dV <sub>OD</sub>	-	50 mV Max.	
	V <sub>OS</sub>	-	1.15 V to 1.35 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	t <sub>r</sub> / t <sub>f</sub>	350 ps Max.	300 ps Max.	LV-PECL: Between 20 % and 80 % of (V <sub>OH</sub> -V <sub>OL</sub> ). LVDS: Between 20 % and 80 % of Differential Output peak to peak voltage
Start-up time	t <sub>str</sub>	3 ms Max.		Time at minimum supply voltage to be 0 s
Phase Jitter	t <sub>pj</sub>	0.6 ps Max.*1		Offset frequency: 12 kHz to 20 MHz
Frequency aging	f <sub>age</sub>	±5 × 10 <sup>-6</sup> / year Max.		+25 °C, First year, V <sub>cc</sub> = 2.5 V, 3.3 V

\*1 0.9 ps Max. (f<sub>o</sub> = 243 MHz ~ 250 MHz, 486 MHz ~ 500 MHz)

Product Name **SG3225 EAN 156.250000MHz K J G A** (ⓈⓈ: CG is not available)

(Standard form)

- ① Model    ② Output (E: LV-PECL, V: LVDS)    ③ Frequency    ④ Supply voltage    ⑤ Frequency tolerance  
 ⑥ Operating temperature    ⑦ Internal identification code ("A" is default)

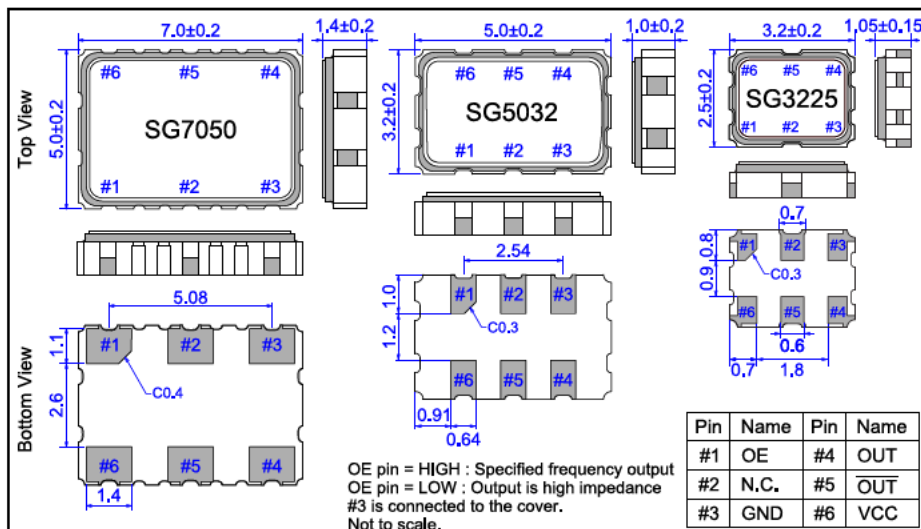
④ Supply voltage
K 2.5 V ~ 3.3 V

⑤ Frequency tolerance
J ±50 × 10 <sup>-6</sup>
E ±30 × 10 <sup>-6</sup>
C ±20 × 10 <sup>-6</sup>

⑥ Operating temperature
B -20 °C ~ +70 °C
G -40 °C ~ +85 °C

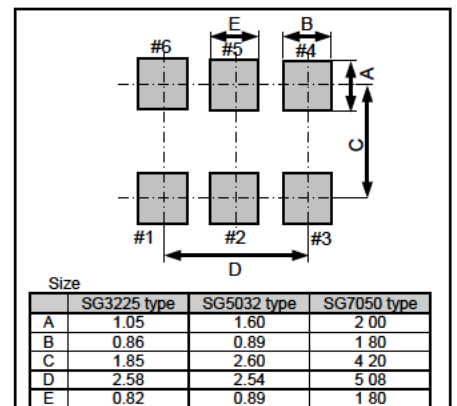
## External dimensions

(Unit: mm)



## Footprint (Recommended)

(Unit: mm)



To maintain stable operation, provide a 0.01 μF to 0.1 μF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between V<sub>cc</sub> - GND).