

CRYSTAL OSCILLATOR (SPXO)

OUTPUT : LV-PECL, LVDS

**Product Number**

Product Number
SG3225EAN: X1G004251xxxy00

SG3225VAN: X1G004241YXYX00

SG3225VAN: X1G004241xxx00
SG5032EAN: Y1G004271xxxx00

SG5032EAN: X1G004271XXX00
SG5032VAN: Y1G004261XXXX00

SG5032VAN: X1G004261xxxx00
SG7050FAN: 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



SG3225EAN/VAN
(3.2 × 2.5 × 1.05 mm)



SG5032EAN/VAN
(5.0 × 3.2 × 1.0 mm)



SG7050EAN/VAN
(7.0 × 5.0 × 1.4 mm)

Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks	
		LV-PECL	LVDS		
		SG3225EAN / SG5032EAN / SG7050EAN	SG3225VAN / SG5032VAN / SG7050VAN		
Output frequency range	f ₀	73.5 MHz to 700 MHz		Please contact us about available frequencies.	
Supply voltage	V _{CC}	K: 2.5 V - 10 % to 3.3 V + 10 %			
Storage temperature	T _{stg}	-40 °C to +125 °C		Storage as single product.	
Operating temperature range	T _{use}	B: -20 °C to +70 °C, G: -40 °C to +85 °C			
Frequency tolerance range	f _{tol}	J: ± 50 × 10 ⁻⁶ , E: ± 30 × 10 ⁻⁶ , C: ± 20 × 10 ⁻⁶			
Current consumption	I _{CC}	65 mA Max.	30 mA Max.	OE = V _{CC} , L _{ECL} = 50 Ω or L _{LVDS} = 100 Ω	
Disable current	I _{dis}	20 mA Max.		OE = GND	
Symmetry	SYM	45 % to 55 %		At outputs crossing point	
Output voltage (LV-PECL)	V _{OH}	V _{CC} - 1.0 V to V _{CC} - 0.8 V	—	DC characteristics	
	V _{OL}	V _{CC} - 1.78 V to V _{CC} - 1.62 V	—		
Output voltage (LVDS)	V _{OD}	—	250 mV to 450 mV	V _{OD1} , V _{OD2}	DC characteristics
	dV _{OD}	—	50 mV Max.	dV _{OD} = V _{OD1} -V _{OD2}	
	V _{OS}	—	1.15 V to 1.35 V	V _{OS1} , V _{OS2}	
	dV _{OS}	—	150 mV Max.	dV _{OS} = V _{OS1} -V _{OS2}	
Output load condition (ECL) / (LVDS)	L _{ECL}	50 Ω	—	Terminated to V _{CC} -2.0 V	
	L _{LVDS}	—	100 Ω	Connected between OUT to $\overline{\text{OUT}}$	
Input voltage	V _{IH}	70 % V _{CC} Min.		OE terminal	
	V _{IL}	30 % V _{CC} Max.			
Rise time / Fall time	t _r / t _f	350 ps Max.	300 ps Max.	LV-PECL: Between 20 % and 80 % of (VOH-VOL). LVDS: Between 20 % and 80 % of Differential Output peak to peak voltage	
Start-up time	t _{str}	3 ms Max.		Time at minimum supply voltage to be 0 s	
Phase Jitter	t _{PJ}	0.6 ps Max.*1		Offset frequency: 12 kHz to 20 MHz	
Frequency aging	f _{age}	± 5 × 10 ⁻⁶ / year Max.		+25 °C, First year, V _{CC} = 2.5 V, 3.3 V	

*1 0.9 ps Max. ($f_0 = 243 \text{ MHz} \sim 250 \text{ MHz}$, $486 \text{ MHz} \sim 500 \text{ MHz}$)

Product Name	SG3225 E AN 156.250000MHz K J G A	(⑤⑥: CG is not available)
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(Standard form)

①	②	③	④	⑤	⑥	⑦
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(5)(6): CG is not available)

①	②	③	④	⑤	⑥	⑦
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①Model ②Output (E: LV-PECL, V: LVDS) ③Frequency ④Supply voltage ⑤Frequency tolerance

⑥ Operating temperature ⑦ Internal identification code ("A" is default)

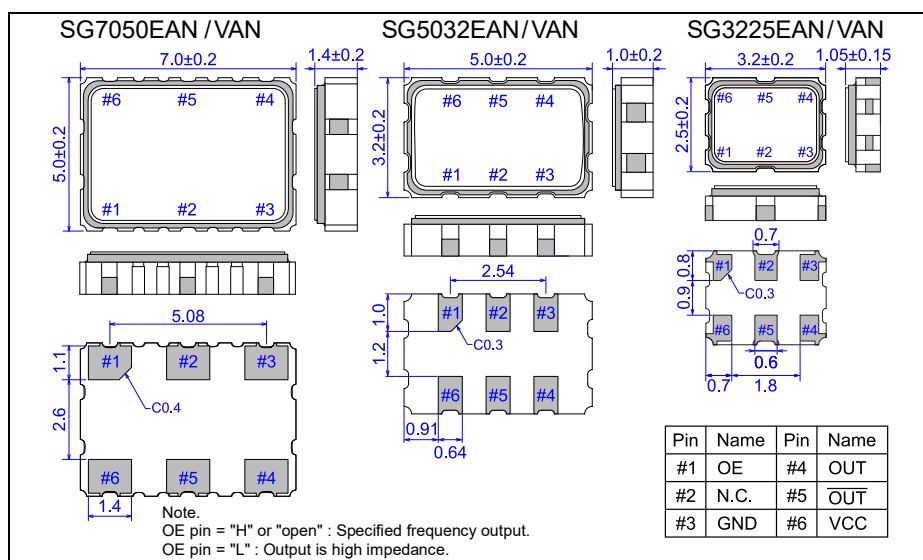
④ Supply voltage	
K	2.5 V ~ 3.3 V

⑤Frequency tolerance	
J	$\pm 50 \times 10^{-6}$
E	$\pm 30 \times 10^{-6}$
G	$\pm 20 \times 10^{-6}$

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

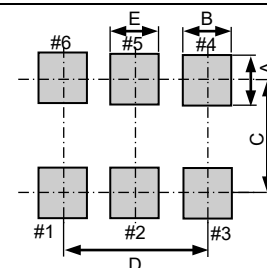
External dimensions

(Unit: mm)



Footprint (Recommended)

(Unit: mm)



Size		D	
	SG3225 type	SG5032 type	SG7050 type
A	1.05	1.60	2.00
B	0.86	0.89	1.80
C	1.85	2.60	4.20
D	2.58	2.54	5.08
E	0.82	0.80	1.80

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 Vcc - GND).

► Explanation of the mark that are using it for the catalog

	► 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 general equipment.
	► Designed for automotive applications related to driving and safety.

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