CRYSTAL OSCILLATOR (SPXO)

OUTPUT : LV-PECL, LVDS

SG3225EAN / VAN
SG5032EAN / VAN
SG7050EAN / VAN

Pb Free RoHS Compliant

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

- •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 SG3225EAN / SG5032EAN / SG7050EAN	LVDS 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 = Vcc, 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}	Vcc - 1.0 V to Vcc - 0.8 V	–	DC characteristics	
	V_{OL}	Vcc - 1.78 V to Vcc - 1.62 V	–		
Output voltage (LVDS)	V_{OD}	–	250 mV to 450 mV	V_{OD1}, V_{OD2}	DC characteristics
	dVOD	–	50 mV Max.	dVOD = | V_{OD1}-V_{OD2} |	
	V_{OS}	–	1.15 V to 1.35 V	V_{OS1}, V_{OS2}	
	dVOS	–	150 mV Max.	dVOS = | V_{OS1}-V_{OS2} |	
Output load condition (ECL) / (LVDS)	L_ECL	50 Ω	–	Terminated to Vcc -2.0 V	
	L_LVDS	–	100 Ω	Connected between OUT to $\overline{OUT}$	
Input voltage	V_{IH}	70 % Vcc Min.		OE terminal	
	V_{IL}	30 % Vcc 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, Vcc = 2.5 V, 3.3 V	

*1 0.9 ps Max. (f_0 = 243 MHz ~ 250 MHz, 486 MHz ~ 500 MHz)

Product Name (Standard form)

SG3225 E AN 156.250000MHz K J G A (⑤⑥: CG is not available)
① ② ③ ④⑤⑥⑦

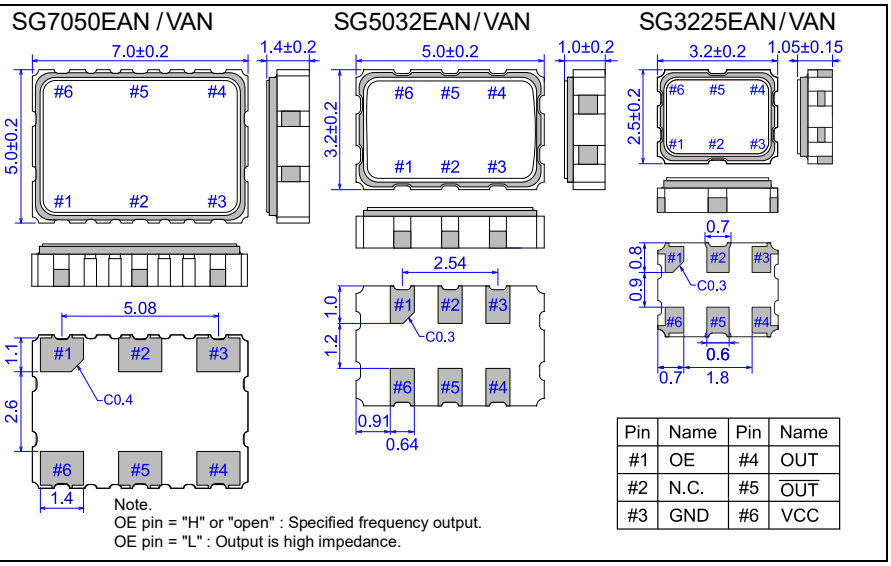
①Model ②Output (E: LV-PECL, V: LVDS) ③Frequency ④Supply voltage ⑤Frequency tolerance ⑥Operating temperature ⑦Internal identification code (“A” is default)

④Supply voltage	
K	2.5 V ~ 3.3 V

⑤Frequency tolerance	
J	±50 × 10^{-6}
E	±30 × 10^{-6}
C	±20 × 10^{-6}

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

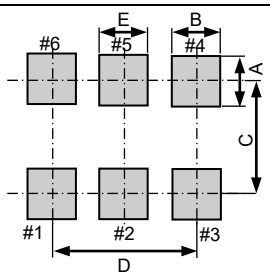
External dimensions (Unit: mm)



Note.
OE pin = "H" or "open" : Specified frequency output.
OE pin = "L" : Output is high impedance.

Pin	Name	Pin	Name
#1	OE	#4	OUT
#2	N.C.	#5	$\overline{OUT}$
#3	GND	#6	VCC

Footprint (Recommended) (Unit: mm)



Size

	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	0.89	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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