

**CRYSTAL OSCILLATOR (SPXO)**  
**OUTPUT : LV-PECL**

**SG3225 / 7050EEN**

- Frequency range : 25 MHz to 325 MHz
- Supply voltage : 2.5 V , 3.3 V
- Output : LV-PECL
- Function : Output enable (OE)
- Phase jitter : 50 fs Typ. (f<sub>0</sub> = 156.25MHz)
- Operating temperature : -40 °C to +85 °C  
: -40 °C to +105 °C



Product Number (please contact us)  
 SG3225EEN X1G005221xxxxxx(f≤200MHz)  
 X1G005511xxxxxx(f>200MHz)  
 SG7050EEN X1G005131xxxxxx(f≤200MHz)  
 X1G005551xxxxxx(f>200MHz)



Actual size

SG3225EEN

SG7050EEN

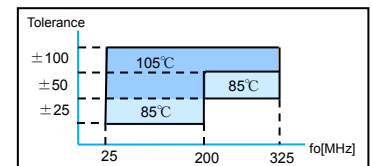
**Specifications (characteristics)**

Item	Symbol	Specifications	Conditions / Remarks	
Output frequency range	f <sub>0</sub>	25 MHz to 325 MHz	Please contact us for inquiries regarding available frequencies.	
Supply voltage	V <sub>cc</sub>	D : 2.5 V ±0.125 V , C : 3.3 V ±0.165 V		
Storage temperature	T <sub>stg</sub>	-55 °C to +125 °C	Store as bare product.	
Operating temperature	T <sub>use</sub>	G : -40 °C to +85 °C , H : -40 °C to +105 °C		
Frequency tolerance See of figure *1	f <sub>tol</sub>	D : ±25 × 10 <sup>-6</sup> Max.	Includes initial tolerance, temperature change, V <sub>cc</sub> change and 5 years aging(+25 °C)	
		J : ±50 × 10 <sup>-6</sup> Max.	Includes initial tolerance, temperature change, V <sub>cc</sub> change and 10 years aging(+25 °C)	
		L : ±100 × 10 <sup>-6</sup> Max.		
Current consumption	I <sub>cc</sub>	60 mA Max.	OE= V <sub>cc</sub> , with output load	
Disable current	I <sub>dis</sub>	25 mA Max.	OE=GND	
Symmetry	SYM	45 % to 55 %	At outputs crossing point	
Output voltage	V <sub>OH</sub>	V <sub>cc</sub> -1.1 V Min.	DC characteristics	
	V <sub>OL</sub>	V <sub>cc</sub> -1.5 V Max.		
Output load condition	L <sub>ECL</sub>	50 Ω	Terminated to V <sub>cc</sub> -2.0V	
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/Fall times	Tr / Tf	25 MHz ≤ f <sub>0</sub> ≤ 200 MHz	200 MHz < f <sub>0</sub> ≤ 325 MHz	20% ~ 80% (V <sub>OH</sub> - V <sub>OL</sub> ) V <sub>cc</sub> : 2.5V V <sub>cc</sub> : 3.3V
		300 ps Max.	350 ps Max.	
		350 ps Max.	350 ps Max.	
Oscillation start up time	t <sub>str</sub>	10 ms Max.	Time at minimum supply voltage to be 0 s	

**Phase jitter**

	100 MHz	125 MHz	156.25 MHz	200 MHz	312.5 MHz
Phase jitter Typ. [fs] (Offset frequency 12k to 20MHz)	75	60	50	40	30

\*1 : Maximum T<sub>use</sub> of operating range



Product Name **SG3225 EEN 156.250000MHz C D G A**

(Standard form) ① ② ③ ④⑤⑥⑦

①Model ②Output (E: LV-PECL) ③Frequency ④Supply voltage (C: 3.3 V Typ. D: 2.5 V Typ.)

⑤Frequency tolerance (D: ±25 × 10<sup>-6</sup> Max. J: ±50 × 10<sup>-6</sup> Max. L: ±100 × 10<sup>-6</sup> Max.)

⑥Operating temperature (G:-40 to +85°C , H:-40 to +105°C) ⑦Internal identification code("A" is default)

**External dimensions**

(Unit:mm)

3225 size

7050 size

	3225 size	7050 size
a	3.2±0.2	7.0±0.2
b	2.5±0.2	5.0±0.2
c	1.05±0.15	1.5±0.2

Pin map

Pin	Connection
1	OE
2	N.C. (Open or V <sub>cc</sub> )
3	GND
4	OUT
5	OUT
6	V <sub>cc</sub>

Note:  
 OE pin = HIGH or "Open" : Specified frequency output.  
 OE pin = LOW : Output is high impedance

**Footprint (Recommended)**

(Unit:mm)

	3225 size	7050 size
A	1.05	2.00
B	0.92	1.80
C	1.85	4.20
D	2.58	5.08
E	0.80	1.80

In order to achieve optimum jitter performance, it is recommended that the capacitor (0.1 μF + 10 μF) between V<sub>cc</sub> and GND pin be placed as close to the V<sub>cc</sub> pin as possible.

## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

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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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Связь**

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