CRYSTAL OSCILLATOR (SPXO)
OUTPUT : HCSL

Pb Free RoHS Compliant

Product Number
X1G005141xxxx00

SG3225HBN

- Frequency range : 100 MHz to 325 MHz
- Supply voltage : 2.5V, 3.3 V
- Output : HCSL
- Function : Output enable (OE)
- External dimensions : 3.2 × 2.5 × 1.05 mm
- Phase jitter : 85 fs Typ (fo = 156.25MHz)



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	fo	100 MHz to 325 MHz	Please contact us for inquiries regarding available frequencies.
Supply voltage	V_{CC}	D : 2.5 V ± 0.125 V , C : 3.3 V ± 0.165 V	
Storage temperature	T_stg	-55 °C to +125 °C	Store as bare product.
Operating temperature	T_use	G: -40 °C to +85 °C, H: -40 °C to +105 °C	
Frequency tolerance	f_tol	J: ± 50 × 10^{-6} (Not available H : -40 °C to +105 °C)	Includes initial frequency tolerance, temperature variation, supply voltage change and 10 years aging(+25 °C)
		L: ± 100 × 10^{-6}	
Current consumption	I_{CC}	25 mA Typ. 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}	0.75 V Typ., 0.66 V to 0.85 V	DC characteristics, single output
	V_{OL}	0 V Typ., -0.15 V to 0.15 V	
Crossing voltage	V_{CR}	0.25 V to 0.55 V	
Output load condition	L_HCSL	50 Ω	
	R_S	33 Ω	
Input voltage	V_{IH}	70 % V_{CC} Min.	OE terminal
	V_{IL}	30 % V_{CC} Max.	
differential output rise slew rate/ fall slew rate	Rr / Rf	1 V/ns 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

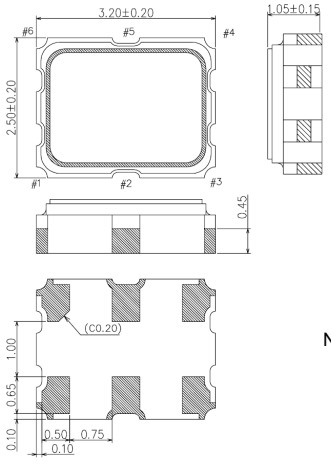
	Output frequency	100 MHz	125 MHz	156.25 MHz	200 MHz	322.265625 MHz	Supply voltage
Phase Jitter [fs] (Offset Frequency 12k to 20MHz)	Typ.	110	95	85	75	65	V_{CC}=3.3V±0.165V
	Max.	180	160	140	125	110	

Product Name (Standard form)

SG3225 HBN 156.250000MHz C J G A (⑤⑥: Not Available code JH)
① ② ③ ④⑤⑥⑦

①Model ②Output (H: HCSL) ③Frequency ④Supply voltage (D: 2.5 V Typ. , C: 3.3 V Typ.)
⑤Frequency tolerance (J: ±50 × 10^{-6} L: ±100 × 10^{-6})
⑥Operating temperature (G:-40 to +85°C, H:-40 to +105°C) ⑦Internal identification code("A" is default)

External dimensions (Unit:mm)

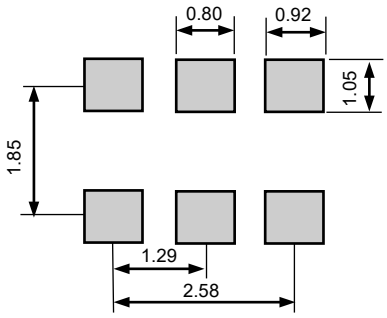


Pin map

Pin	Connection
1	OE
2	N.C.
3	GND
4	OUT
5	$\overline{OUT}$
6	V_{CC}

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

Footprint (Recommended) (Unit:mm)



In order to achieve optimum jitter performance, it is recommended that the capacitor (0.1 µF + 10 µF) between V_{CC} and GND pin should be placed as close to the V_{CC} 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.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs, Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired IATF 16949 certification that is requested strongly by major automotive manufacturers as standard.

IATF 16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

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

Pb Free	►Pb free.
RoHS Compliant	►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.)
For Automotive	►Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

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