SEIKO EPSON CORPORATION

CRYSTAL OSCILLATOR (SPXO)

OUTPUT : LV-PECL, LVDS

Product Number
SG2520EGN: X1G005881xxxx15
SG2520VGN: X1G005901xxxx15

SG2520EGN/VGN (high frequency range)

- •Frequency : 500 MHz to 625 MHz
- •Supply voltage : 2.5 V Typ. / 3.3 V Typ.
- •Frequency tolerance : ±50 × 10^{-6}
- •Operating temperature : -40 °C to +85 °C, -40 °C to +105 °C
- •Function : Output enable (OE)
- •Phase jitter : 40 fs Max. (fo = 625 MHz)

SG2520EGN
SG2520VGN
(2.5 × 2.0 × 0.74 mm)

Specifications (characteristics)

Item	Symbol	Specifications LV-PECL SG2520EGN	Specifications LVDS SG2520VGN	Conditions / Remarks
Output frequency	fo	500 MHz to 625 MHz		Please contact us for available frequencies.
Supply voltage	V_{CC}	C: 3.3 V ± 5 %, D: 2.5 V ± 5 %		
Storage temperature	T_stg	-55 °C to +125 °C		
Operating temperature	T_use	G: -40 °C to +85 °C, H: -40 °C to +105 °C		
Frequency tolerance	f_tol	±50 × 10^{-6} Max.		Includes initial frequency tolerance, frequency / temperature characteristics, frequency / voltage coefficient and 10 years aging (+25 °C)
Current consumption	I_{CC}	60 mA Max.	–	OE = V_{CC}, L_ECL = 50 Ω
		–	40 mA Max.	OE = V_{CC}, L_LVDS = 100 Ω
Disable current	I_dis	35 mA Max.	30 mA Max.	OE = GND
Symmetry	SYM	45 % to 55 %		At output crossing point
Output voltage (LV-PECL)	V_{OH}	V_{CC} - 1.1 V Min.	–	Output option: A, DC characteristic
	V_{OL}	V_{CC} - 1.6 V Max.		
Differential swing	V_{SW}	0.8 V to 1.6 V	500 mV to 900 mV	Output option: A
		–	800 mV to 1 400 mV	Output option: B
		–	700 mV to 1 100 mV	Output option: C
Output voltage (LVDS)	V_{OD}	–	250 mV to 450 mV	Output option: A; Differential output voltage, V_{OD1}, V_{OD2}
			400 mV to 700 mV	Output option: B
			350 mV to 550 mV	Output option: C
	dV_{OD}	–	50 mV Max.	dV_{OD} = | V_{OD1} - V_{OD2} |
	V_{OS}	–	1.15 V to 1.35 V	Offset voltage, V_{OS1}, V_{OS2}
	dV_{OS}	–	50 mV Max.	dV_{OS} = | V_{OS1} - V_{OS2} |
Output load condition	L_ECL	50 Ω	–	Terminated to V_{CC} - 2.0 V
	L_LVDS	–	100 Ω	Connected between OUT and $\overline{OUT}$
Input voltage	V_{IH}	70 % V_{CC} Min.		OE terminal
	V_{IL}	30 % V_{CC} Max.		
Rise/Fall times	tr/tf	0.2 ns Max.		20 % - 80 % of V_{SW}
Start-up time	t_str	10 ms Max.		t = 0 at 90 % V_{CC}
Phase jitter	t_{PJ}	40 fs Max.		fo = 625 MHz, Offset frequency: 12 kHz to 20 MHz

Product name

Product Name (Standard form)

SG2520 EGN 625.000000MHz C J H P X A
a b c d e f g h i

a: Model b: Output (E: LV-PECL, V: LVDS) c: Frequency d: Supply voltage e: Frequency tolerance
f: Operating temperature g: Function h: Internal identification code ("X" is default) i: Output option

d: Supply voltage	
C	3.3 V Typ.
D	2.5 V Typ.

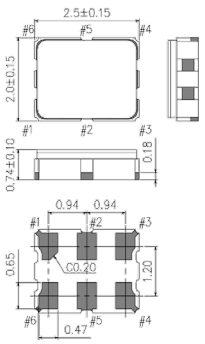
e: Freq. tolerance	
J	±50 × 10^{-6}

f: Operating temperature	
G	-40 °C to +85 °C
H	-40 °C to +105 °C

g: Function	
P	OE

i: Output option		
	SG2520EGN	SG2520VGN
A	Default	V_{OD} = 250 mV to 450 mV
B	–	V_{OD} = 400 mV to 700 mV
C	–	V_{OD} = 350 mV to 550 mV

External dimensions (Unit:mm)

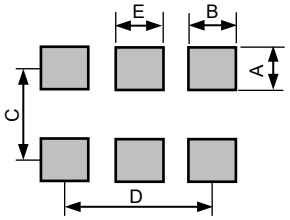


Pin map

Pin	Connection
1	OE
2	N.C. (Open or V_{CC})
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)



	SG2520EGN SG2520VGN
A	0.88
B	0.76
C	1.38
D	1.99
E	0.63

In order to achieve optimum jitter performance, it is recommended that 0.1 µF and 10 µF bypass capacitors should be connected between V_{CC} and GND and placed as close to the V_{CC} pin as possible.

►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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