

LOW-JITTER SAW OSCILLATOR (SPSO)

OUTPUT : LV-PECL, LVDS



Product Number
 EG-2121CB P: X1M000211xxxx00
 EG-2121CB L: X1M000231xxxx00
 EG-2102CB P: X1M000201xxxx00
 EG-2102CB L: X1M000221xxxx00

EG-2121CB
EG-2102CB



- Frequency range : 100 MHz to 700 MHz
 - Supply voltage : 2.5 V ... EG-2121CB
3.3 V ... EG-2102CB
 - Output : LV-PECL or LVDS
 - Function : Output enable (OE)
 - External dimensions : 5.0 × 3.2 × 1.4 mm
- Low jitter and low phase noise by SAW unit.

Specifications (characteristics)

Item	Symbol	LV-PECL		LVDS		Conditions / Remarks	
		EG-2121CB P	EG-2102CB P	EG-2121CB L	EG-2102CB L		
Output frequency range	f _o	100 MHz to 700 MHz				Please contact us about available frequencies.	
Supply voltage	V _{cc}	2.5 V ± 0.125 V	3.3 V ± 0.33 V	2.5 V ± 0.125 V	3.3 V ± 0.33 V		
Storage temperature	T _{stg}	-55 °C to +125 °C				Storage as single product.	
Operating temperature	T _{use}	P: 0 °C to +70 °C, R: -5 °C to +85 °C, S: -20 °C to +70 °C					
Frequency tolerance	f _{tol}	G: ±50 × 10 ⁻⁸ , H: ±100 × 10 ⁻⁸					
Current consumption	I _{cc}	60 mA Max.		30 mA Max.		OE=V _{cc} , L ECL=50 Ω or L LVDS=100 Ω	
Disable current	I _{dis}	2 mA Max.		15 mA Max.		OE=GND	
Symmetry	SYM	45 % to 55 %				At outputs crossing point	
Output voltage (LV-PECL)	V _{OH}	1.55 V Typ.	2.35 V Typ.	-		DC characteristics	
		V _{cc} -1.025 V to V _{cc} -0.88 V		-			
	V _{OL}	0.80 V Typ.	1.60 V Typ.	-			
Output voltage (LVDS)	V _{OD}	-		350 mV Typ., 247 mV to 454 mV	V _{OD1} , V _{OD2}		
	dV _{OD}	-		50 mV Max.	dV _{OD} = V _{OD1} -V _{OD2}		
	V _{OS}	-		1.25 V Typ., 1.125 V to 1.375 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 $\bar{O}UT$	
Input voltage	V _{IH}	70 % V _{cc} Min.				OE terminal	
	V _{IL}	30 % V _{cc} Max.					
Rise time / Fall time	t _r / t _f	400 ps Max.				Between 20 % and 80 % of (V _{OH} -V _{OL}). Between 20 % and 80 % of Differential Output Peak to Peak voltage.	
Start-up time	t _{str}	10 ms Max.				Time at minimum supply voltage to be 0 s	
Phase Jitter	t _{pj}	0.23 ps Max.		0.27 ps Max.		Offset frequency: 12 kHz to 20 MHz	
		0.22 ps Max.		0.24 ps Max.			
		0.21 ps Max.		0.23 ps Max.			
		0.18 ps Max.		0.19 ps Max.			
		0.16 ps Max.		0.16 ps Max.			
		0.14 ps Max.		0.14 ps Max.			
Frequency aging	f _{age}	± 10 × 10 ⁻⁸ / year Max.				+25 °C, First year, V _{cc} =2.5 V, 3.3 V	

Product Name **EG-2121CB 212.500000MHz P H P A** (⑤⑥⑦: GRA, GSA are not available)
 (Standard form) ① ② ③ ④⑤⑥⑦

①Model ②Package type ③Frequency

④Output(P:LV-PECL, L:LVDS)

⑤Frequency tolerance ⑥Operating temperature

⑦Frequency aging (A*1: Frequency tolerance include aging, N*2: Frequency tolerance exclude aging)

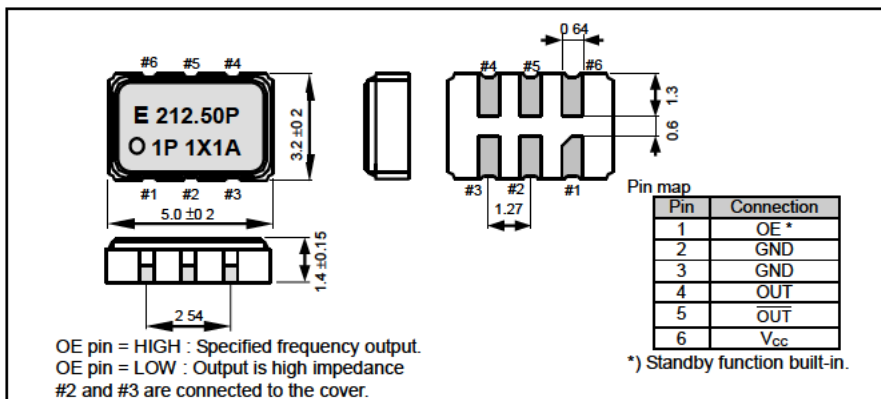
*1 This includes initial frequency tolerance, temperature variation, supply voltage change, reflow drift, and aging(+25 °C, 10 years).

*2 This includes initial frequency tolerance, temperature variation, supply voltage change, and reflow drift (except aging).

⑤Frequency tolerance		⑥Operating temp.	
G	±50 × 10 ⁻⁸	P	0 °C to +70 °C
H	±100 × 10 ⁻⁸	R	-5 °C to +85 °C
		S	-20 °C to +70 °C

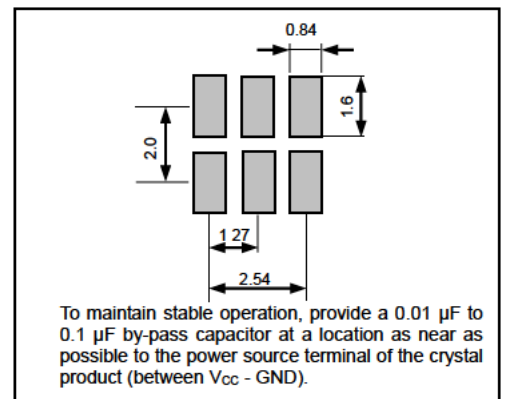
External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)



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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.

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	► 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.)
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