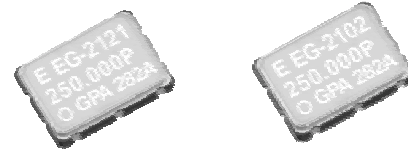


CRYSTAL OSCILLATOR
LOW-JITTER SAW OSCILLATOR



EG-2121 / 2102CA series

- Frequency range : 53.125 MHz to 700 MHz
- Supply voltage : 2.5 V (EG-2121CA)
3.3 V (EG-2102CA)
- Output : Differential LV-PECL or LVDS
- Function : Output enable(OE)
- Thickness : 1.2 mm Typ.
- Very low jitter and low phase noise by SAW unit.



Actual size
EG-2121CA EG-2102CA

Specifications (characteristics)

Item	Symbol	EG-2121CA	EG-2102CA	EG-2121CA	EG-2102CA	Remarks
		Differential LV-PECL		LVDS		
Output frequency range	f ₀	53.125 MHz to 500 MHz	100 MHz to 700 MHz	53.125 MHz to 700 MHz		Please contact us for inquiries regarding available frequencies.
Supply voltage	V _{CC}	2.5 V ±0.125 V	3.3 V ±0.3 V	2.5 V ±0.125 V	3.3 V ±0.3 V	
Temperature range	Storage temperature	-40 °C to +100 °C				Store as bare product after unpacking
	Operating temperature	P:0 °C to +70 °C ,R:-5 °C to +85 °C ,S:-20 °C to +70 °C				
Frequency tolerance	f _{tol} (osc)	G: ± 50 × 10 ⁻⁶ ,H: ±100 × 10 ⁻⁶				Please contact us for inquiries about S spec. P:0 °C to +70 °C,R:-5 °C to +85 °C *1
Current consumption	I _{CC}	80 mA Max.	100 mA Max.	30 mA Max	45 mA Max.	OE=V _{CC} ,R _L =50 Ω or 100 Ω
Output disable current	I _{DIS}	20 mA Max.	32 mA Max	20 mA Max	30 mA Max.	OE=GND
Symmetry	SYM	P:45 % to 55 %	P:45 % to 55 %	L:45 % to 55 %	L:45 % to 55 %	f ₀ =350 MHz (at outputs crossing point) *1
Output voltage	V _{OH}	1.55 V Typ.	2.35 V Typ.	—		DC characteristics
		V _{CC} -1.025 to V _{CC} -0.88				
	V _{OL}	0.8 V Typ.	1.6 V Typ.	—		
		V _{CC} -1.81 to V _{CC} -1.62				
	V _{OD}	—		350 mV Typ. 247 mV to 454 mV		Differential output, DC characteristics
	ΔV _{OD}	—		50 mV		
V _{OS}	—		1.25 V Typ. 1.125 V to 1.375 V			
	ΔV _{OS}	—		150 mV		Offset change, DC characteristics
Output load condition	R _L	50 Ω		100 Ω		LV-PECL: Terminated to V _{CC} -2.0 V LVDS: Connected between OUT to OUT
Output enable input voltage	V _{IH}	70 % V _{CC} Min.				OE terminal
Output disable input voltage	V _{IL}	30 % V _{CC} Max.				OE terminal
Output rise and fall time	t _r / t _f	400 ps Max.				LV-PECL: 80 % to 20 % (V _{OH} -V _{OL}) LVDS: 80 % to 20 % (V _{OD} ×2)
Oscillation start up time	t _{OSC}	10 ms Max.				Time at minimum supply voltage to be 0 s
Jitter *2	t _{DJ}	0.2 ps Typ.				Deterministic Jitter
	t _{RJ}	3 ps Typ.				Random Jitter
	t _{RMS}	3 ps Typ.				σ (RMS of total distribution)
	t _{P-P}	25 ps Typ.				Peak to Peak
	t _{ACC}	4 ps Typ.				Accumulated Jitter(σ) n=2 to 50000 cycles
Phase Jitter	t _{PJ}	0.05 × 10 ⁻³ UI Typ. 1 ps Max.				Offset frequency: 12 kHz to 20 MHz
Frequency aging *3	f _{aging}	± 10 × 10 ⁻⁶ / year Max.				+25 °C, First year, V _{CC} =2.5 V, 3.3 V

*1 As per below table.

*2 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

*3 Except: ***A

Output mode		P:Differential LV-PECL		D: Differential LV-PECL		L:LVDS		V:LVDS	
Frequency range	EG-2121CA	All range		f ₀ ≤ 175 MHz		All range		f ₀ ≤ 175 MHz	
	EG-2102CA			f ₀ ≤ 350 MHz					
Symmetry	EG-2121CA	50 ± 10 % (f ₀ > 350 MHz)		50 ± 2 %		50 ± 10 % (f ₀ > 350 MHz)		50 ± 2 %	
	EG-2102CA	50 ± 5 % (f ₀ ≤ 350 MHz)				50 ± 5 % (f ₀ ≤ 350 MHz)			
Details of frequency tolerance		A *4	N *5	A *4	N *5	A *4	N *5	A *4	N *5
Frequency tolerance	HP: ±100 × 10 ⁻⁶ (0°C to +70°C)	PHPA	PHPN	DHPA	DHPN	LHPA	LHPN	VHPA	VHPN
	HR: ±100 × 10 ⁻⁶ (-5°C to +85°C)	PHRA*6	PHRN*6	DHRA*6	DHRN*6	LHRA*6	LHRN*6	VHRA*6	VHRN*6
	GP: ±50 × 10 ⁻⁶ (0°C to +70°C)	PGPA*6	PGPN*6	DGPA*6	DGPN*6	LGPA*6	LGPN*6	VGPA*6	VGPN*6
	GR: ±50 × 10 ⁻⁶ (-5°C to +85°C)	—	PGRN*6	—	DGRN*6	—	LGRN*6	—	VGRN*6

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

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

*6 53.125 MHz ≤ f₀ < 100 MHz : Unavailable.

External dimensions

(Unit:mm)

Footprint (Recommended)

(Unit:mm)

