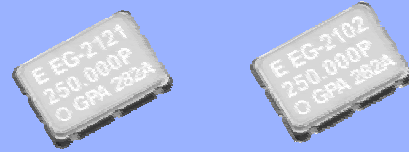


CRYSTAL OSCILLATOR

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		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: $\pm 50 \times 10^{-6}$, H: $\pm 100 \times 10^{-6}$				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} , RL=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 % ($V_{OD} \times 2$)
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 $\times 10^{-3}$ UI Typ. 1 ps Max.				Offset frequency: 12 kHz to 20 MHz
Frequency aging *3	f_{aging}	$\pm 10 \times 10^{-6}$ / 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		$f_0 \leq 175$ MHz		All range		$f_0 \leq 175$ MHz	
	EG-2102CA			$f_0 \leq 350$ MHz					
Symmetry	EG-2121CA	50 ± 10 % ($f_0 > 350$ MHz)		50 ± 2 %		50 ± 10 % ($f_0 > 350$ MHz)		50 ± 2 %	
	EG-2102CA	50 ± 5 % ($f_0 \leq 350$ MHz)				50 ± 5 % ($f_0 \leq 350$ MHz)			
Details of frequency tolerance		A *4	N *5	A *4	N *5	A *4	N *5	A *4	N *5
Frequency tolerance	HP: $\pm 100 \times 10^{-6}$ (0°C to +70°C)	PHPA	PHPN	DHPA	DHPN	LHPA	LHPN	VHPA	VHPN
	HR: $\pm 100 \times 10^{-6}$ (-5°C to +85°C)	PHRA*6	PHRN*6	DHRA*6	DHRN*6	LHRA*6	LHRN*6	VHRA*6	VHRN*6
	GP: $\pm 50 \times 10^{-6}$ (0°C to +70°C)	PGPA*6	PGPN*6	DGPA*6	DGPN*6	LGPA*6	LGPN*6	VGPA*6	VGPN*6
	GR: $\pm 50 \times 10^{-6}$ (-5°C to +85°C)	—	PGRN*6	—	DGRN*6	—	LGRN*6	—	VGRN*6

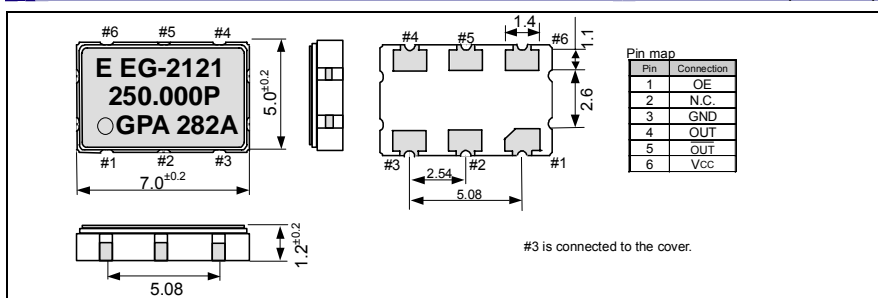
*4 This includes initial frequency tolerance, temperature variation, supply voltage variation, reflow drift, and aging(+25 °C, 10 years).

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

*6 53.125 MHz $\leq f_0 < 100$ MHz : Unavailable.

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

