

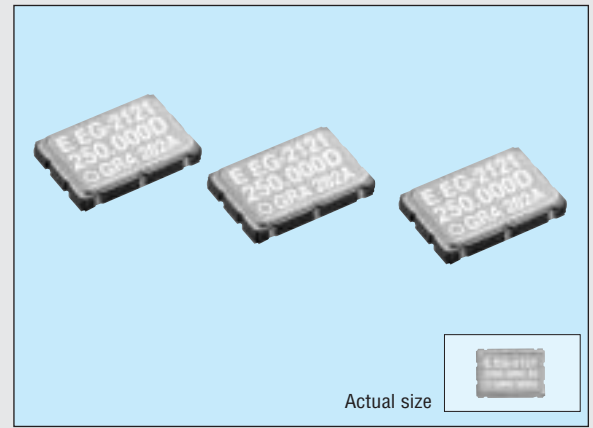
LOW JITTER HIGH FREQUENCY CRYSTAL OSCILLATOR

EG-2121CA

Product number (please refer to page 2)

Q3805CA0xxxxx00

- Generates high frequency clock with fundamental mode
- Very low jitter and low phase noise.
- Ceramic package with 1.4 mm Max. thickness.
- Excellent shock resistance and environmental capability.
- Differential LV-PECL output.
- Provided with output enable function (OE).



■ Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	f_0	53.125 MHz to 500.0000 MHz	Please contact us for inquiries about the available frequency
Power source voltage	Max. supply voltage	V_{CC-GND}	-0.5 V to +4.0 V
	Operating voltage	V_{CC}	2.5 V $\pm$ 0.125 V
Temperature range	Storage temperature	T_{STG}	-40 °C to +100 °C
	Operating temperature	T_{OPR}	P: 0 °C to +70 °C, R: -5 °C to +85 °C
Frequency stability	$\Delta f/f_0$	G: $\pm 50 \times 10^{-6}$, H: $\pm 100 \times 10^{-6}$ *1	P: 0 °C to +70 °C, R: -5 °C to +85 °C
Current consumption	I_{OP}	80 mA Max.	OE= V_{CC}
Output disable current	I_{OE}	20 mA Max.	OE=GND
Duty	t_w/t	40 % to 60 %	fo < 175 MHz at outputs crossing point
		48 % to 52 %	
Output voltage	V_{OH}	1.55 V Typ. $V_{CC}-1.025$ to $V_{CC}-0.88$	DC characteristics
	V_{OL}	0.8 V Typ. $V_{CC}-1.81$ to $V_{CC}-1.62$	DC characteristics
Output load condition (fan out)	R_L	50 Ω	Terminated to $V_{CC}-2.0$ V
Output enable	V_{IH}	0.7 V_{CC} Min.	OE
disable input voltage	V_{IL}	0.3 V_{CC} Max.	OE
Output rise time	t_{TLH}	400 ps Max.	20 % $\rightarrow$ 80 % of ($V_{OH} - V_{OL}$)
Output fall time	t_{THL}	400 ps Max.	80 % $\rightarrow$ 20 % of ($V_{OH} - V_{OL}$)
Oscillation start up time	t_{OSC}	10 ms Max.	Time at 2.375 V to be 0 s
Jitter	t_{DJ}	5 ps Typ.(10 ps Max.)	Deterministic Jitter
	t_{RJ}	3 ps Typ.(4 ps Max.)	Random Jitter
	t_{RMS}	3 ps Typ.(4 ps Max.)	σ
	t_{p-p}	25 ps Typ.(40 ps Max.)	Peak to Peak
	t_{acc}	4 ps Typ.(5 ps Max.)	Accumulated Jitter(σ) n= 2 to 50000 cycles

*1 Include initial frequency tolerance, reflow shift, temperature variation, supply voltage variation and aging (As per below table).

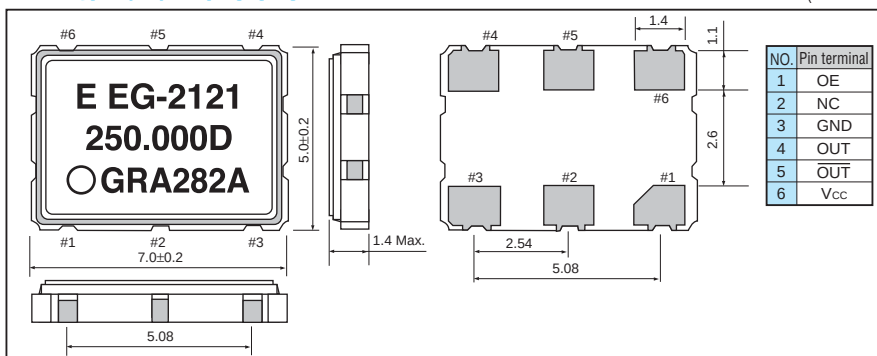
Frequency range(MHz)		53.125 MHz to 400 MHz		53.125 MHz to 200 MHz	
Output mode		P:PECL Duty ± 5 %		D:PECL Duty ± 2 %	
Details of frequency stability		A	N	A	N
Frequency stability	HP: $\pm 100 \times 10^{-6}$ (0 °C to +70 °C)	PHPA	PHPN	DHPA	DHPN
	HR: $\pm 100 \times 10^{-6}$ (-5 °C to +85 °C)	PHRA	PHRN	DHRA	DHRN
	GP: $\pm 50 \times 10^{-6}$ (0 °C to +70 °C)	PGPA	PGPN	DGPA	DGPN
	GR: $\pm 50 \times 10^{-6}$ (-5 °C to +85 °C)		PGRN		DGRN

A: Include initial frequency tolerance, reflow shift, temperature variation, supply voltage variation, load change and 10 years aging.

N: Include initial frequency tolerance, reflow shift, temperature variation, supply voltage variation and load change.

■ External dimensions

(Unit: mm)



■ Recommended soldering pattern (Unit: mm)

