

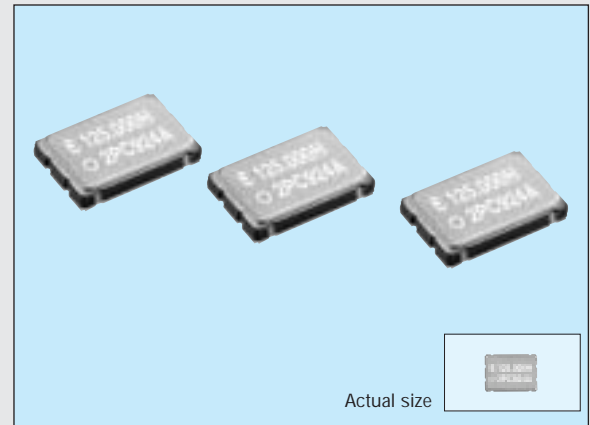
## LOW JITTER HIGH FREQUENCY CRYSTAL OSCILLATOR

**EG-2002CA**

Product number (please refer to page 2)

**Q3802CA0xxxxx00**

- 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.
- LV TTL output
- Provided with output enable function (OE).

**Specifications (characteristics)**

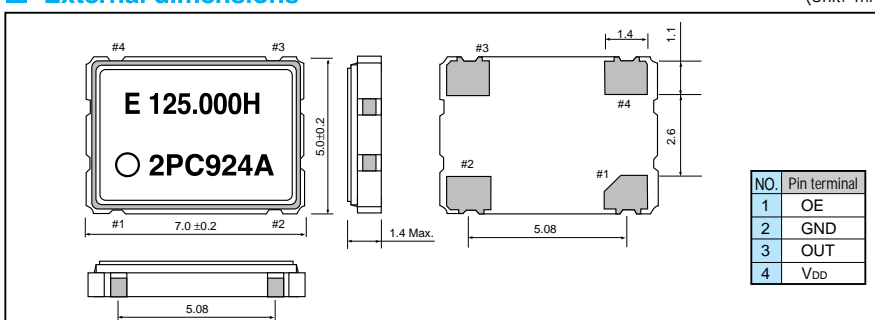
Item	Symbol	Specifications	Remarks
Output frequency range	$f_0$	62.5000 MHz to 170.0000 MHz	Please contact us for inquiries about the available frequency
Power source voltage	Max. supply voltage	$V_{DD-GND}$	-0.5 V to +7.0 V
	Operating voltage	$V_{DD}$	3.3 V $\pm$ 0.3 V
Temperature range	Storage temperature	$T_{STG}$	-40 °C to +100 °C
	Operating temperature	$T_{OPR}$	0 °C to +70 °C
Frequency stability	$\Delta f/f_0$	$\pm 50 \times 10^{-6}$ , $\pm 100 \times 10^{-6}$ *1	0 °C ~ +70 °C
Current consumption	$I_{op}$	60 mA Max.	OE= $V_{DD}$
Output disable current	IOE	25 mA Max.	OE=GND
Duty	C-MOS level	$tw/t$	45 % to 55 %
	TTL level		
Output voltage	$V_{OH}$	$V_{DD} - 0.4$ V Min.	$I_{OH} = -8$ mA
	$V_{OL}$	0.4 V Max.	$I_{OL} = 8$ mA
Output load condition (fan out)	$C_L$	25 pF Max.	$f_0 = 62.5$ MHz
		15 pF Max.	$f_0 > 62.5$ MHz
Output enable/disable input voltage	$V_{IH}$	0.7 $V_{DD}$ Min.	OE
	$V_{IL}$	0.3 $V_{DD}$ Max.	OE
Output rise time	$t_{RLH}$	1.5 ns Max.	0.8 V to 2.0 V, $C_L \leq$ Max.
Output fall time	$t_{THL}$	1.5 ns Max.	2.0 V to 0.8 V, $C_L \leq$ Max.
Oscillation start up time	$t_{osc}$	10 ms Max.	Time at 3.0 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.)	$\sigma$
	$t_{p-p}$	25 ps Typ.(40 ps Max.)	Peak to Peak
	$t_{acc}$	4 ps Typ.( 5 ps Max.)	Accumulated Jitter( $\sigma$ ) n=2 to 50000cycles

\*1.Frequency stability is including variation in reflow soldering drift, operating temperature range, operating voltage range, load change and Aging (As per below table).

Operating voltage		C : 3.3 V	
Output mode		P : Fundamental frequency	D : Divided frequency
Frequency range(MHz)		125 to 170	62.5 to 124.9999
Frequency stability	H : $\pm 100 \times 10^{-6}$ (0 °C to +70 °C)	PCH	DCH
	Y : $\pm 100 \times 10^{-6}$ (0 °C to +70 °C) except Aging	PCY	DCY
	Z : $\pm 50 \times 10^{-6}$ (0 °C to +70 °C)	PCZ	DCZ
	except Reflow soldering drift, Load change, Operating voltage range and Aging		

**External dimensions**

(Unit: mm)

**Recommended soldering pattern** (Unit: mm)