



CRYSTAL OSCILLATOR
LOW-JITTER SAW OSCILLATOR

EG - 2002CA

- Frequency range : 62.5 MHz to 170 MHz
- Operating voltage : 3.3 V
- Output : LV-TTL
- Function : Output enable(OE)
- Thickness : 1.2 mm Typ.
- Very low jitter and low phase noise by SAW unit.



Actual size



Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	f _o	62.500 MHz to 170.000 MHz	Please contact us for inquiries regarding available frequencies.
Supply voltage	V _{cc}	3.3 V ± 0.3 V	
Temperature range	T _{stg}	-40 °C to +100 °C	Store as bare product after unpacking
Operating temperature	T _{use}	0 °C to +70 °C	
Frequency tolerance	f _{tol(osc)}	±50 × 10 ⁻⁶ , ±100 × 10 ⁻⁶	0 °C to +70 °C *1
Current consumption	I _{cc}	60 mA Max.	OE=V _{cc} , No load condition
Output disable current	I _{dis}	25 mA Max.	OE=GND
Symmetry	SYM	45 % to 55 %	1.4 V level, L _{CMOS} ≤ Max.
High output voltage	V _{OH}	2.4 V Min.	I _{OH} = -8 mA
Low output voltage	V _{OL}	0.4 V Max.	I _{OL} = 8 mA
Output load condition	L _{CMOS}	25 pF Max.	f _o = 62.5 MHz
		15 pF Max.	f _o > 62.5 MHz
High input voltage	V _{IH}	70 % V _{cc} Min.	OE terminal
Low input voltage	V _{IL}	30 % V _{cc} Max.	OE terminal
Output rise and fall time	t _r / t _f	1.5 ns Max.	0.8 V → 2.0 V level, L _{CMOS} ≤ Max.
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.	Offset frequency: 12 kHz to 20 MHz
		1 ps Max.	
Frequency aging *3	f _{aging}	± 5 × 10 ⁻⁶ / year Max.	+25 °C, First year, V _{cc} =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 : PCH,DCH

Frequency range (MHz)		P: 125 to 170	D: 62.5 to 124.999
Details of frequency tolerance	H: ±100×10 ⁻⁶ (0 °C to +70 °C)*4	PCH	DCH
	Y: ±100×10 ⁻⁶ (0 °C to +70 °C) *5	PCY	DCY
	Z: ±50×10 ⁻⁶ (0 °C to +70 °C)*6	PCZ	DCZ
	F: ±50×10 ⁻⁶ (0 °C to +70 °C)*5	PCF (125 MHz Only)	—

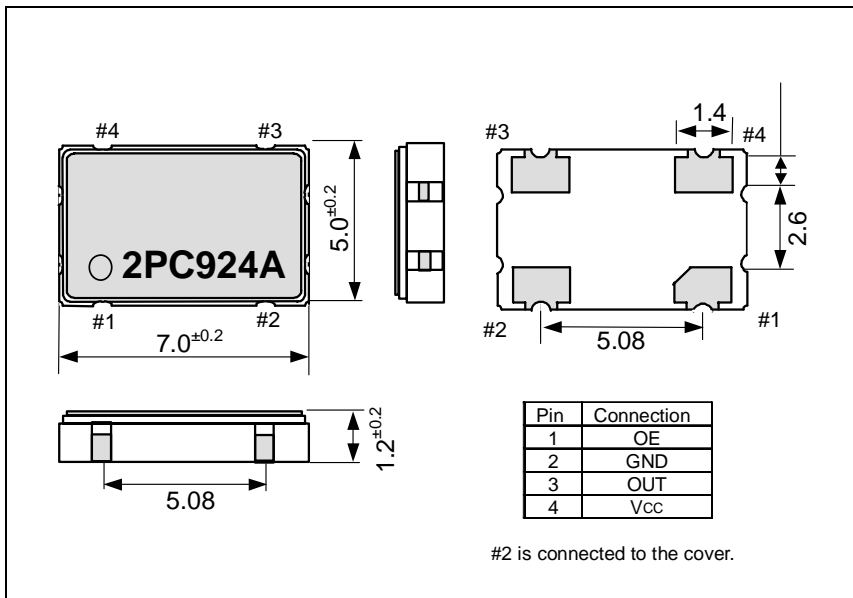
*4 This includes initial frequency tolerance, temperature variation, supply voltage variation, load variation, reflow drift, and 10 years aging(+25 °C,10 years).

*5 This includes initial frequency tolerance, temperature variation, supply voltage variation, load variation, and reflow drift (except 10 years aging).

*6 This includes initial frequency tolerance and temperature variation (except supply voltage variation, load variation, reflow drift, and 10 years aging).

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

