



CRYSTAL OSCILLATOR PROGRAMMABLE

SG - 8002JC / JA series

- Frequency range : 1 MHz to 125 MHz
 - Supply voltage : 3.3 V / 5.0 V
 - Function : Output enable(OE) or Standby(ST)
 - Thickness : 2.7 mm Max.(SG-8002JC)
4.7 mm Max.(SG-8002JA)
- Package and pin compatible with SG-636 (SG-8002JC)
Package and pin compatible with SG-615 (SG-8002JA)
- Short mass production lead time by PLL technology.
 - SG-Writer available to purchase.
- Please contact Epson Toyocom or local sales representative.



Product Number (please contact us)
SG-8002JC: Q3307JcX1xxxx00
SG-8002JA: Q3306JAx1xxxx00



Actual size

SG-8002JC



SG-8002JA



Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks	
		PT / ST	PH / SH	PC / SC		
Output frequency range	f _o	1 MHz to 125 MHz			V _{cc} =4.5 V to 5.5 V	
		—			V _{cc} =3.0 V to 3.6 V	
		—			V _{cc} =2.7 V to 3.6 V	
Supply voltage	V _{cc}	4.5 V to 5.5 V				
Temperature range	Storage temperature	-55 °C to +125 °C (JC:-55 °C to +100 °C)			Store as bare product after unpacking	
	Operating temperature	T _{use}	-20 °C to +70 °C (-40 °C to +85 °C)	-40 °C to +85 °C	Refer to "Outline specifications" (Frequency range) SG-8002JC:-20 °C to +70 °C Only	
Frequency tolerance	f _{tol}	B: ±50 × 10 ⁻⁶ , C: ±100 × 10 ⁻⁶			-20 °C to +70 °C	
		M: ±100 × 10 ⁻⁶			-40 °C to +85 °C *3 (except SG-8002JC)	
Current consumption	I _{cc}	45 mA Max.		28 mA Max.	No load condition, Max. frequency	
Disable current	I _{dis}	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)	
Stand-by current	I _{std}	50 µA Max.			ST=GND(ST,SH,SC)	
Symmetry *1	SYM	—		40 % to 60 %	CMOS load:50 % V _{cc} level, Max. load condition	
		40 % to 60 %		—	TTL load: 1.4 V level, Max. load condition	
High output voltage	V _{OH}	V _{cc} -0.4 V Min.			I _{OH} =-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)	
Low output voltage	V _{OL}	0.4 V Max.			I _{OL} =16 mA(PT,ST,PH,SH), 8 mA(PC,SC)	
Output load condition (TTL) *1	L _{TTL}	5TTL Max.		—	f _o ≤ 90 MHz and Max. Supply voltage	
Output load condition (CMOS) *1	L _{CMOS}	15pF Max.			Max. frequency and Max. Supply voltage	
Output enable / disable input voltage	V _{IH}	2.0 V Min.		70 % V _{cc} Min.	ST terminal or OE terminal	
	V _{IL}	0.8 V Max.		20 % V _{cc} Max.		
Rise time / Fall time *1	t _r / t _f	—			3 ns Max.	CMOS load: 20 % V _{cc} to 80 % V _{cc} level
		4 ns Max.		—		TTL load: 0.4 V to 2.4 V level
Start-up time	t _{str}	10 ms Max.			Time at minimum supply voltage to be 0 s	
Frequency aging	f _{aging}	±5 × 10 ⁻⁶ / year Max.			+25 °C, V _{cc} =5.0 V/ 3.3 V (PC,SC) First year	

*1 Operating temperature (-40 °C to +85 °C), the available frequency, symmetry and output load conditions, please refer to "Outline specifications" page.

*2 PLL-PLL connection & Jitter specification, please refer to "Jitter specifications and characteristics chart" page.

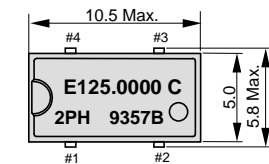
*3 PT / ST and PH / SH for "M" tolerance will be available up to 55 MHz.(Unavailable "M" tolerance of SG-8002JC)

Checking possible by the Frequency Checking Program.

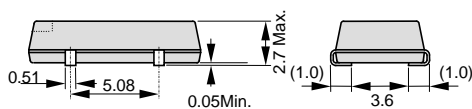
External dimensions

(Unit:mm)

SG-8002JC



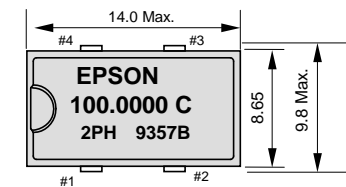
Note.
 OE Pin (PT, PH, PC)
 OE pin = "H" or "open" : Specified frequency output.
 OE pin = "L" : Output is high impedance.
 ST pin (ST, SH, SC)
 ST pin = "H" or "open" : Specified frequency output.
 ST pin = "L" : Output is low level (weak pull - down), oscillation stops.



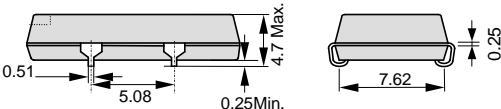
Pin map

Pin	Connection
1	OE or ST
2	GND
3	OUT
4	V _{cc}

SG-8002JA



Metal may be exposed on the top or bottom of this product. This will not affect any quality, reliability or electrical spec.



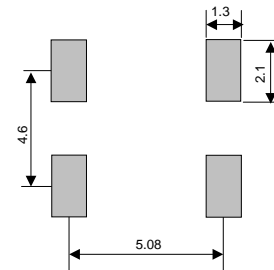
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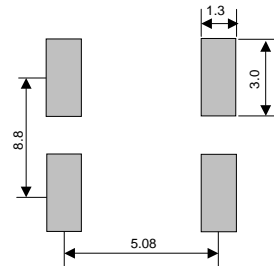
Footprint (Recommended)

(Unit:mm)

SG-8002JC



SG-8002JA



To maintain stable operation, provide by-pass capacitor with more than 0.1 µF at a location as near as possible to the power source terminal of the crystal products (between V_{cc} - GND).