



**CRYSTAL OSCILLATOR  
PROGRAMMABLE**

**SG - 8002JC / JA series**

- Frequency range : 1 MHz to 125 MHz
  - Supply voltage : 3.3 V or 5.0 V
  - Function : Output enable(OE) or Standby( $\overline{ST}$ )
  - 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.



Actual size

SG-8002JC

SG-8002JA



**Specifications (characteristics)**

Item	Symbol	Specifications *2			Remarks	
		PT / ST	PH / SH	PC / SC		
Output frequency range	f <sub>0</sub>	1 MHz to 125 MHz			V <sub>CC</sub> =4.5 V to 5.5 V	
		—			V <sub>CC</sub> =3.0 V to 3.6 V	
		—			V <sub>CC</sub> =2.7 V to 3.6 V	
Supply voltage	V <sub>CC</sub>	4.5 V to 5.5 V		2.7 V to 3.6 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 <sub>use</sub>	-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 <sub>tol(osc)</sub>	B: ±50 × 10 <sup>-6</sup> , C: ±100 × 10 <sup>-6</sup> M: ±100 × 10 <sup>-6</sup>			-20 °C to +70 °C -40 °C to +85 °C *3 (except SG-8002JC)	
Current consumption	I <sub>CC</sub>	45 mA Max.		28 mA Max.	No load condition, Max. frequency	
Output disable current	I <sub>dis</sub>	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)	
Stand-by current	I <sub>std</sub>	50 µA Max.			$\overline{ST}$ =GND(ST,SH,SC)	
Symmetry *1	SYM	—		40 % to 60 %	CMOS load: 50 % V <sub>CC</sub> level, Max. load condition	
		40 % to 60 %		—	TTL load: 1.4V level, Max. load condition	
High output voltage	V <sub>OH</sub>	V <sub>CC</sub> -0.4 V Min.			I <sub>OH</sub> =-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)	
Low output voltage	V <sub>OL</sub>	0.4 V Max.			I <sub>OL</sub> =16 mA(PT,ST,PH,SH), 8 mA(PC,SC)	
Output load condition (TTL) *1	L <sub>TTL</sub>	5TTL Max.		—	f <sub>0</sub> ≤ 90 MHz and Max. Supply voltage	
Output load condition (CMOS) *1	L <sub>CMOS</sub>	15pF Max.			Max. frequency and Max. Supply voltage	
Output enable / disable input voltage	V <sub>IH</sub>	2.0 V Min.		70 % V <sub>CC</sub> Min.	$\overline{ST}$ , OE terminal	
	V <sub>IL</sub>	0.8 V Max.		20 % V <sub>CC</sub> Max.	$\overline{ST}$ , OE terminal	
Output rise and fall time *1	t <sub>r</sub> / t <sub>f</sub>	—			3 ns Max.	CMOS load: 20 % V <sub>CC</sub> to 80 % V <sub>CC</sub> level
		4 ns Max.		—	—	TTL load: 0.4 V to 2.4 V level
Oscillation start up time	t <sub>osc</sub>	10 ms Max.			Time at minimum supply voltage to be 0 s	
Frequency aging	f <sub>aging</sub>	±5 × 10 <sup>-6</sup> / year Max.			+25 °C, V <sub>CC</sub> =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)

**External dimensions**

(Unit:mm)

**Footprint (Recommended)**

(Unit:mm)

