Programmable Clock Oscillator

SG - 8002JA series (-40 to +85 °C)

- Using PLL technology and One Time PROM programmability for quick-turn custom version.
- Reflowable and high density mounting type SMD package compatible with SG-615.
- Operable 3.3 V or 5.0 V and Out put frequencies from 1.0 MHz to 55 MHz at 5.0 V (up to 125 MHz at 3.3 V).
- Output enable (OE : P type) or Standby (ST : S type) function allow more low current consumption.

Specifications

1. Absolute Maximum Ratings

Item	Symbol	PH / SH	PT / ST	PC / SC	Remarks
Storage Temperature	TSTG	- 55 to +125 °C			Stored as bare product
Maximum supply voltage	VDD	- 0.5 to 7.0 V			
Maximum input voltage	VIN	- 0.5 to VDD+0.5 V			
Soldering condition	TSOL	Twice at under +260 °C within 10 s or under +230 °C within 3 min.			

2. Operating Conditions

Item	Symbol	PH / SH	PT / ST	PC / SC	Remarks
Operating Temperature	TOPR	-40 to +85 °C			≦ 55 MHz (CL=15 pF) ≦ 40 MHz (CL=25 pF)
			-40 to +85 °C		≦ 55 MHz (CL=15 pF) ≦ 40 MHz(5TTL+15 pF)
				-40 to +85 °C	≦ 66.7 MHz (3.0 V CL=15 pF) ≦ 125 MHz (3.3 V CL=15 pF) ≦ 40 MHz (3.3 V CL=30 pF)
Operating voltage	VDD	4.5 to 5.5 V		2.7 to 3.6 V	
Input voltage	VIN	GND to VDD			
Output load condition	CL	15 pF 25 pF			(≦ 55 MHz) (≦ 40 MHz)
			15 pF 5TTL+15 pF		(≦ 55 MHz) (≦ 40 MHz)
				15 pF 15 pF 30 pF	(≦ 66.7 MHz / 3.0 V) (≦ 125 MHz / 3.3 V) (≦ 40 MHz / 3.3 V)

3. Frequency Characteristics

Item	Symbol	PH / SH	PT / ST	PC / SC	Remarks
Output frequency range*	fo	1.0 to 55 MHz		1.0 to 125 MHz 1.0 to 66.7 MHz	VDD=4.5 to 5.5 V VDD=3.0 to 3.6 V VDD=2.7 to 3.6 V
Frequency stability	f / fo	B : +/- 50 × 10^{-6} C : +/- 100 × 10^{-6} M : +/- 100 × 10^{-6}			-20 to +70 °C -20 to +70 °C -40 to +85 °C
Aging	fa	+/- 5 × 10^{-6} Max.			

*Note :
Concerning frequency, please contact us to check the possibility in advance.
Because SG-8000 series has unavailable frequency.

4. Characteristics

Item		Symbol	PH / SH	PT / ST	PC / SC	Remarks
Current consumption		IOP	45 mA Max.		28 mA Max.	
Disable current		IOE	30 mA Max.		16 mA Max.	P type only
Standby current		IST	50 µA Max.			S type only
OE or ST input voltage		VIH	2.0 V		70 %VDD	
		VIL	0.8 V		20 %VDD	
OE or ST input current		IIH	5.0 µA Max.			OE or ST = VDD
		IIL	10.0 µA Max.			OE or ST = GND
Duty		tw / t	45 to 55%			50 % VDD, CL=15 pF (≦ 55 MHz) 50 % VDD, CL=25 pF (≦ 40 MHz)
				45 to 55%		1.4 V, CL=15 pF (≦ 55 MHz) 1.4 V, 5 TTL+15 pF (≦ 40 MHz)
					45 to 55%	50 % VDD, CL=30 pF VDD=3.0 to 3.6 V (≦ 40 MHz)
					40 to 60%	50 % VDD, CL=15 pF VDD=3.0 to 3.6 V (≦125 MHz)
					40 to 60%	50 % VDD, CL=15 pF VDD=2.7 to 3.6 V (≦66.7 MHz)
Output voltage	C-MOS TTL	VOH	VDD-0.4		VDD-0.4	IOH=-16 mA IOH= -8 mA
		VOL	0.4 V		0.4 V	IOL=16 mA IOL= 8 mA
Output rise time	C-MOS	tr	4.0 ns		4.0 ns	20 % to 80 % VDD CL=Max.
	TTL			2.0 ns		0.8 V to 2.0 V CL=Max.
				4.0 ns		0.4 V to 2.4 V CL=Max.
Output fall time	C-MOS	tf	4.0 ns		4.0 ns	80 % to 20 % VDD CL=Max.
	TTL			2.0 ns		2.0 V to 0.8 V CL=Max.
				4.0 ns		2.4 V to 0.4 V CL=Max.
Oscillation start up time		tOSC	10 ms Max.			

**Note :
Output wave form is not compatible with C-MOS level and TTL level.
Programmable wave form only for C-MOS level or TTL level.

5. External Dimensions

(Unit : mm)