

High Frequency Crystal Oscillator

SG - 710**W series

Preliminary

- Reflowable and high density mounting type SMD package
- Operable 3.3V or 5.0V and Out put frequencies from 80 MHz to 135 MHz .
- Output enable(OE : P type) or Standby (ST : S type) function allow more low current consumption.

Specifications

1. Absolute Maximum Ratings

Item	Symbol	PHW / SHW	PTW / STW	PCW / SCW	Remarks
Storage Temperature	TSTG	- 55 to 125°C			Stored as bare product
Maximum supply voltage	VDD	- 0.5 to 7.0V			
Maximum input voltage	VIN	- 0.5 to VDD+0.5V			
Soldering condition	TSOL	Twice at under 260°C within 10sec. or under 230°C within 3min.			

2. Operating Conditions

Item	Symbol	PHW / SHW	PTW / STW	PCW / SCW	Remarks	
Operating Temperature	TOPR	- 20 ~ 70°C		- 40 ~ 85°C		
Operating voltage	VDD	4.5 ~ 5.5V		3.0 ~ 3.6V		
Input voltage	VIN	GND ~ VDD				
Output load condition	CL	15 pF			(≤ 135 MHz)	
		25 pF			(≤ 125 MHz)	
			5TTL+15pF			(≤ 90 MHz)
			15 pF			(≤ 135 MHz)
				15 pF	(≤ 135 MHz)	

3. Frequency Characteristics

Item	Symbol	PHW / SHW	PTW / STW	PCW / SCW	Remarks
Output frequency range*	f ₀	80 ~ 135 MHz			VDD=4.5 ~ 5.5V VDD=3.0 ~ 3.6V
Frequency stability	f / f ₀	B : +/- 50 ppm		B : +/- 50 ppm	- 20 ~ 70°C
		C : +/- 100 ppm		C : +/- 100 ppm	- 20 ~ 70°C
		-----		M : +/- 100 ppm	- 40 ~ 85°C
Aging	f _a	+/- 5ppm max.			@25°C , 1 st year

*Note :

Please contact to EPSON about Standard Frequency.

4. Characteristics

Item	Symbol	PHW / SHW	PTW / STW	PCW / SCW	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 μ A max.			S type only	
OE or ST input voltage	V _{IH}	2.0V		70%V _{DD}		
	V _{IL}	0.8V		20%V _{DD}		
OE or ST input current	I _{IH}	5 μ A max.			OE or ST = V _{DD}	
	I _{IL}	10 μ A max.			OE or ST = GND	
Duty	Tw / T	40 ~ 60%			50%V _{DD} , CL=15pF (\leq 135M)	
		40 ~ 60%			50%V _{DD} , CL=25pF (\leq 125M)	
			40 ~ 60%		1.4V, CL=15pF (\leq 135M)	
			40 ~ 60%		1.4V, 5 TTL+15pF (\leq 90M)	
Output voltage	C-MOS TTL	V _{OH}	V _{DD} -0.4		I _{OH} =-16mA I _{OH} =- 8mA	
		V _{OL}	0.4V		I _{OL} = 16mA I _{OL} = 8mA	
Output rise time	C-MOS	tr	4.0 ns		4.0 ns	20% to 80%V _{DD} CL= max.
	TTL			2.0 ns 4.0 ns		0.8V to 2.0V CL= max. 0.4V to 2.4V CL= max.
Output fall time	C-MOS	tf	4.0 ns		4.0 ns	80% to 20%V _{DD} CL= max.
	TTL			2.0 ns 4.0 ns		2.0V to 0.8V CL= max. 2.4V to 0.4V CL= max.
Oscillation start up time	tOSC	10 msec. Max.				

5. External Dimensions (Unit : mm)

