Crystal Oscillator

SG – 645**G Series

Products number
Q33645Gxxxxxx00

- Reflowable and high density mounting type SMD package
- Operable 3.3 V or 5.0 V
- Out put frequencies from 2.500 MHz to 33.000 MHz
- Output enable(OE : P type) or Standby(ST : S type) function allow more low current consumption.

Specifications

1. Absolute Maximum Ratings

Item	Symbol	PT/PH	PC/SC	Remarks
Storage Temperature	T_{STG}	-55 °C ~ +125 °C		Stored as bare product
Maximum supply voltage	V_{DD}	-0.5 V ~ 7.0 V		
Maximum input voltage	V_{IN}	-0.5 V ~ V_{DD}+0.5 V		

2. Operating Conditions

Item	Symbol	PT/PH	PC/SC	Remarks
Operating Temperature	T_{OPR}	-40 °C ~ +85 °C		
Operating voltage	V_{DD}	4.5 V ~ 5.5 V	2.7 V ~ 3.6 V	
Input voltage	V_{IN}	GND ~ V_{DD}		
Output load condition	CL	25 pF		

3. Frequency Characteristics

Item	Symbol	PT/PH	PC/SC	Remarks
Output frequency range*	f_0	2.500 MHz ~ 33.000 MHz		V_{DD}=2.7 V ~ 3.6 V
Frequency stability	f / f_0	B: $\pm 50\times10^{-6}$,C: $\pm 100\times10^{-6}$		-20 °C ~+70 °C
		M: $\pm 100\times10^{-6}$		-40 °C ~+85 °C
Aging	fa	$\pm 5\times10^{-6}$ Max.		+25 °C,V_{DD}=3.3V First year

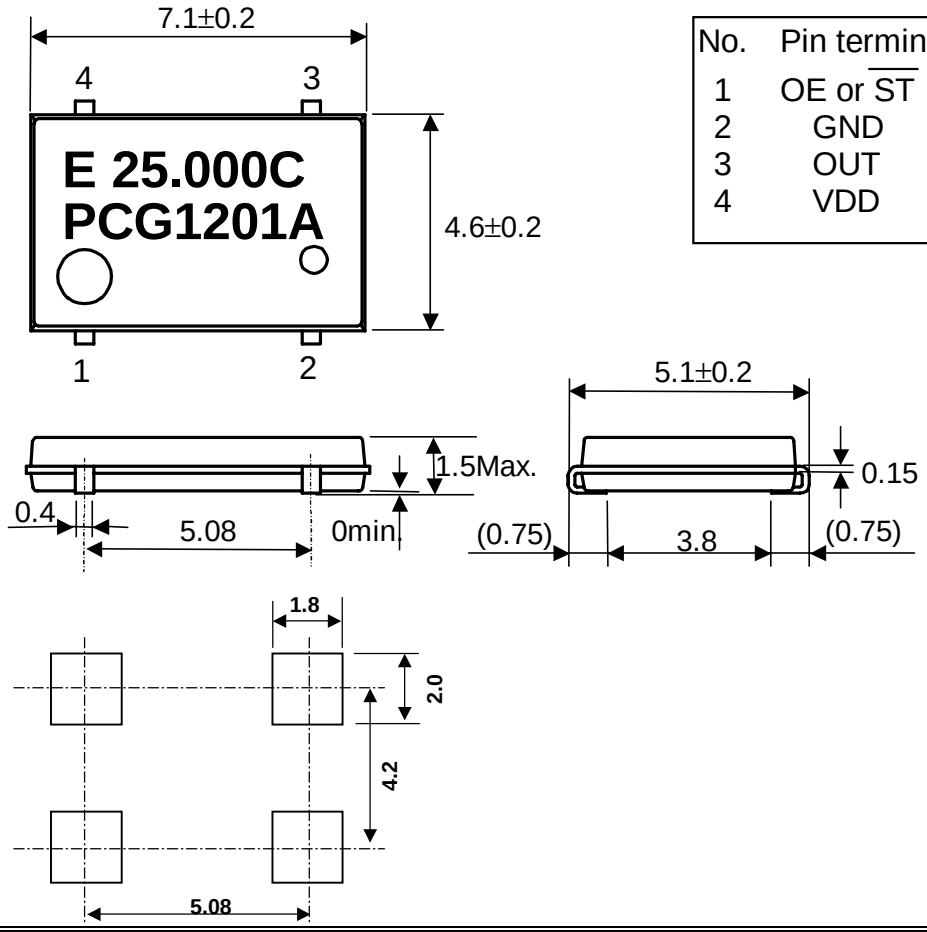
*Note :
Standard Frequencies (MHz)

2.5	**3.6864**	**5.0**	**7.3728**	**10.0**	**14.7456**	**20.0**	**29.4912**
2.8125	**3.6873625**	**5.625**	**7.374725**	**11.25**	**14.74945**	**22.5**	**29.4989**
3.072	**3.75**	**6.144**	**7.5**	**12.288**	**15.0**	**24.576**	**30.0**
3.125	**3.84**	**6.25**	**7.68**	**12.5**	**15.36**	**25.0**	**30.72**
3.375	**4.0**	**6.75**	**8.0**	**13.5**	**16.0**	**27.0**	**32.0**
3.579545	**4.096**	**7.15909**	**8.192**	**14.31818**	**16.384**	**28.63636**	**32.768**

4. Characteristics

Item	Symbol	PT	PH	PC/SC	Remarks
Current consumption	I_{OP}	25 mA Max.		12 mA Max.	No Load
Disable current	I_{OE}	20 mA Max.		10 mA Max.	OE =GND
Standby current	I_{ST}	-		50 µA Max.	ST =GND
OE or ST input voltage	V_{IH}	2.0 V Min.		70 %V_{DD} Min.	
	V_{IL}	0.8 V Max.		20 %V_{DD} Max.	
OE or ST input current	I_{IH}	5 µA Max.			OE or ST = V_{DD}
	I_{IL}	10 µA Max.			OE or ST =GND
Duty	Tw / T	-	45 %~ 55 %		50%V_{DD}, CL= 25 pF
		40 %~ 60 %	-		1.4V Level, CL=25pF
Output voltage	V_{OH}	2.4 V Min.	-	V_{DD}-0.4 V Min.	I_{OH}=- 8 mA
		-	V_{DD}-0.4 V Min.	-	I_{OL} = - 16mA
	V_{OL}	-	0.4 V Max.		I_{OL}= 8 mA
		0.4 V Max	-		I_{OL} = 16mA
Output rise time	tr	-	3.4 ns Max.	4.0 ns Max.	20 % ~ 80 %V_{DD}, CL ≤25 pF
		1.2 ns Max.	-		0.8 V ~ 2.0 V, CL≤25 pF
		2.4 ns Max.	-		0.4 V ~ 2.4V, CL≤25 pF
Output fall time	tf	-	3.4 ns Max.	4.0 ns Max.	80 % ~ 20 %V_{DD}, CL ≤25 pF
		1.2 ns Max.	-		2.0 V ~ 0.8 V, CL ≤25 pF
		2.4 ns Max.	-		0.4 V ~ 2.4V, CL≤25 pF
Oscillation start up time	tOSC	12 ms Max.			Time at minimum operating voltage to be o s

5. External Dimensions & Recommended soldering pattern (Unit : mm)



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