Crystal Oscillator

## **SG - 615PCG**

# **Preliminary**

# Products number Q33615G4xxxxx00

- Reflowable and high density mounting type SMD package
- Operable 3.3V
- Out put frequencies from 1.500 MHz to 26.000 MHz
- Output enable(OE : P type) function allow more low current consumption.

## **Specifications**

#### 1. Absolute Maximum Ratings

| Item                   | Symbol | Spec.                            | Remarks                |
|------------------------|--------|----------------------------------|------------------------|
| Storage Temperature    | Tstg   | -55 °C to +125 °C                | Stored as bare product |
| Maximum supply voltage | Vdd    | -0.5 V to 7.0 V                  |                        |
| Maximum input voltage  | Vin    | -0.5 V to V <sub>DD</sub> +0.5 V |                        |

#### 2. Operating Conditions

| Item                  | Symbol | Spec.         | Remarks |
|-----------------------|--------|---------------|---------|
| Operating Temperature | Topr   | -40C ~ +85 °C |         |
| Operating voltage     | VDD    | 2.7 V ~ 3.6 V |         |
| Input voltage         | Vin    | GND ~ VDD     |         |
| Output load condition | CL     | 25 pF         |         |

#### 3. Frequency Characteristics

| Item                    | Symbol | Spec.   | Remarks           |
|-------------------------|--------|---|-------------------|
| Output frequency range* | f0     | 1.500 MHz ~ 26.000 MHz                            | VDD=2.7 V ~ 3.6 V |
| Frequency stability     | f / fo | B: ±50×10 <sup>-6</sup> ,C: ±100×10 <sup>-6</sup> | -20 °C ~+70 °C    |
|                         |        | M: ±100×10 <sup>-6</sup>                          | -40 °C ~+85 °C    |
| Aging                   | fa     | ±5×10 <sup>-6</sup> Max.                          | +25 °C,VDD=3.3V   |
|                         |        |   | First year        |

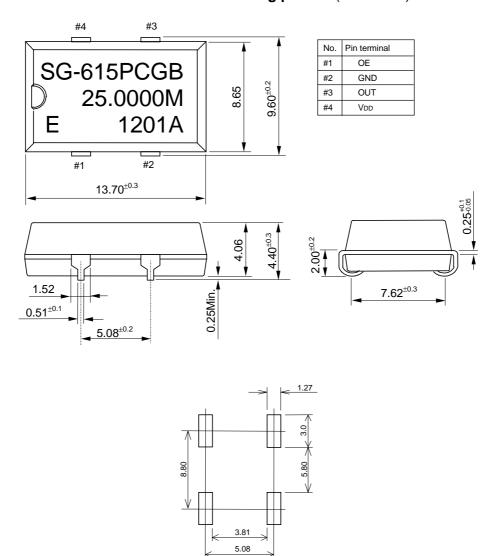
<sup>\*</sup>Note:

Please contact to EPSON about Standard Frequency.

#### 4. . Characteristics

| Item                      | Symbol | Spec.          | Remarks                                     |
|---------------------------|--------|----------------|---|
| Current consumption       | lop    | 25 mA Max.     | No Load                                     |
| Disable current           | loe    | 10mA           | OE=GND                                      |
| OE input voltage          | VIH    | 70 %VDD Min.   |   |
|                           | VIL    | 20 %VDD Max.   |   |
| OE input current          | lін    | 5 μA Max.      | OE = V <sub>DD</sub>                        |
|                           | lıL    | 10 μA Max.     | OE =GND                                     |
| Duty                      | Tw/T   | 45 %~ 55 %     | 50%VDD, CL= 25 pF                           |
| Output voltage            | Voн    | VDD-0.4 V Min. | VDD=2.7 V, IOH=- 8 mA                       |
|                           | Vol    | 0.4 V Max.     | VDD=2.7 V, IOL= 8 mA                        |
| Output rise time          | tr     | 4.0 ns Max.    | 20 % to 80 %VDD CL ≤25 pF                   |
| Output fall time          | tf     | 4.0 ns Max.    | 80 % to 20 %VDD CL ≤25 pF                   |
| Oscillation start up time | tosc   | 15 ms Max.     | Time at minimum operating voltage to be o s |

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



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Issued on jun.,2001