

**Opto Plus LED Corp.**  
**0.39" SMD Type LED Display**  
**OPS-S3910PG-GW**  
**OPS-S3911PG-GW**

● **FEATURES**

- 0.39 inch (10.0 mm) Digit Height.
- SMD type.
- Low current operation.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The OPS-S3910PG-GW & OPS-S3911PG-GW are 0.39 inch (10.0mm) height Single 7-segment displays.

This device utilizes Pure Green LED chip which are made from InGaN on a Transparent GaN, substrate.

The display has Gray face, White segment.

● **DEVICE**

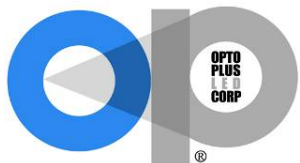
| PART NO        | DESCRIPTION    |
|----------------|----------------|
| OPS-S3910PG-GW | Common Anode   |
| OPS-S3911PG-GW | Common Cathode |

**RoHS Compliance**



**Pb free.**





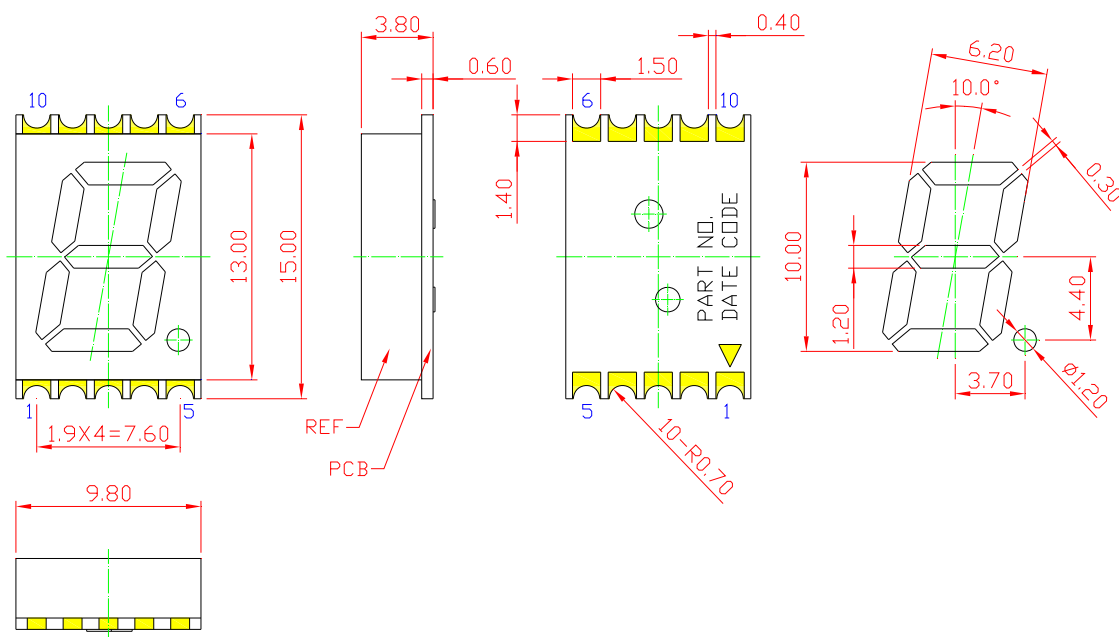
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## 0.39" SMD Type LED Display

### OPS-S3910PG-GW

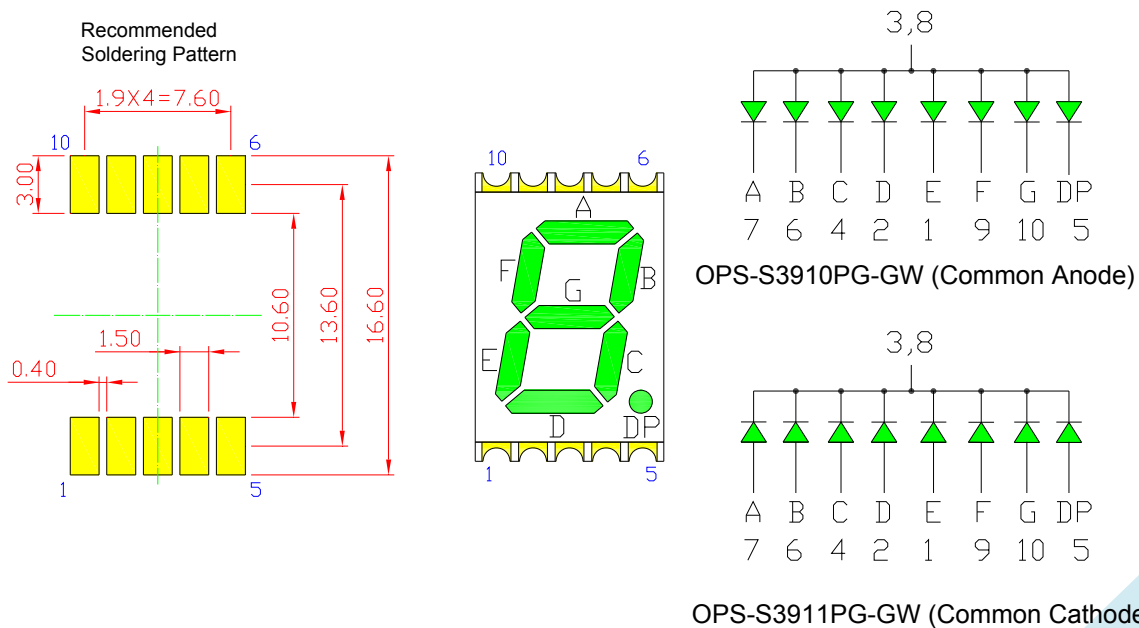
### OPS-S3911PG-GW

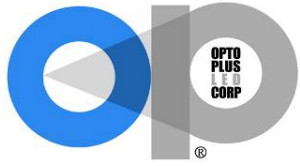
#### MECHANICAL DIMENSIONS



NOTE:  
Dimension in millimeters (inches),  
And tolerance are  $\pm 0.25\text{mm}$  (.01") specified.

#### TYPICAL INTERNAL EQUIVALENT CIRCUIT





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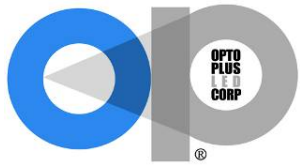
● **PG: PURE GREEN (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| Parameter                            | Symbol    | Maximum Rating | Unit    |
|--------------------------------------|-----------|----------------|---------|
| Power dissipation                    | $P_{AD}$  | 120            | mW      |
| Derating liner from 25°C             | -         | 0.3            | mA / °C |
| Continuous forward current           | $I_{AF}$  | 30             | mA      |
| Peak current (duty cycle 1/10, 1kHz) | $I_{PF}$  | 100            | mA      |
| Reverse voltage                      | $V_R$     | 5              | V       |
| Operating temperature                | $T_{OPR}$ | -40 to +105    | °C      |
| Storage temperature                  | $T_{STG}$ | -40 to +105    | °C      |

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

| Characteristic               | Symbol          | Condition           | Min. | Type. | Max. | Unit          |
|------------------------------|-----------------|---------------------|------|-------|------|---------------|
| Forward Voltage, (Per Dice)  | $V_F$           | $I_F = 20\text{mA}$ | -    | 3.2   | 4.0  | V             |
| Reverse Current, (Per Dice)  | $I_R$           | $V_R = 8\text{V}$   | -    | -     | 10   | $\mu\text{A}$ |
| Dominant Wavelength          | $\lambda_D$     | $I_F = 20\text{mA}$ | -    | 525   | -    | nm            |
| Luminous Intensity           | $I_V$           | $I_F = 20\text{mA}$ | -    | 130   | -    | mcd           |
| Spectral radiation bandwidth | $\Delta\lambda$ | $I_F = 20\text{mA}$ | -    | 30    | -    | nm            |



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### OPS-S3910PG-GW

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#### ● PG: PURE GREEN (InGaN/GaN) CURVE

#### Typical Electro-optical Characteristic Curves (25 °C Free Air Temperature Unless Otherwise Specified)

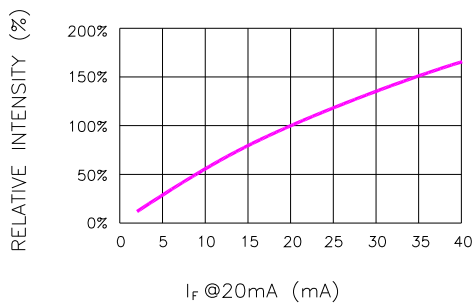


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

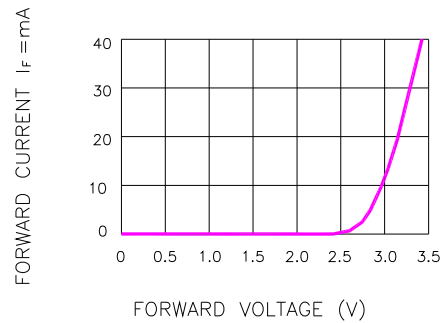


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

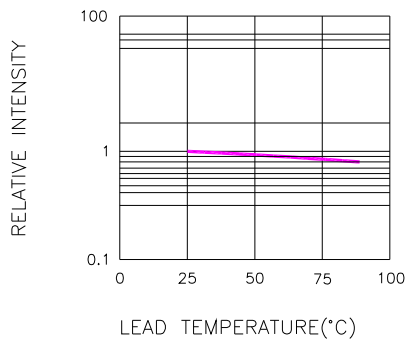


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE  
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

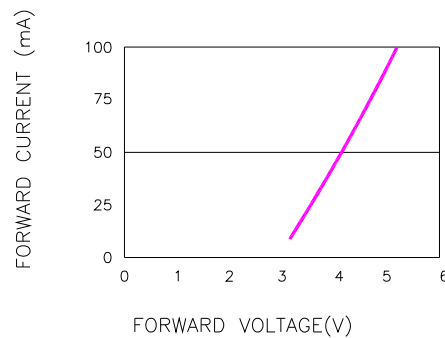


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD CURRENT  
(100us TEST PULSE, 1% DUTY CYCLE)

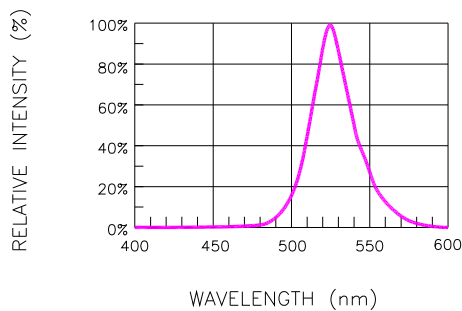


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

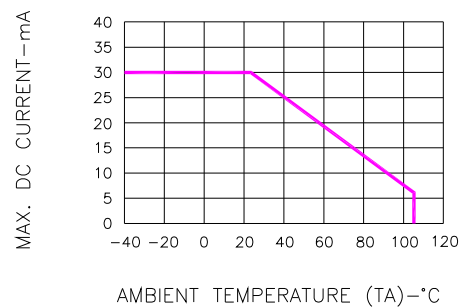


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

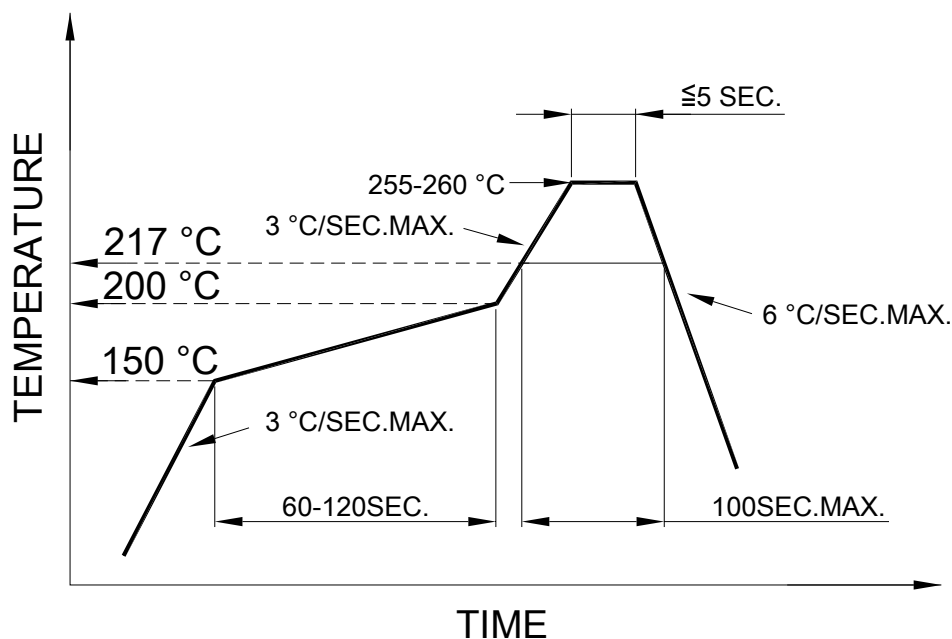


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● **RECOMMEND SOLDERING PROFILE**

SMT Soldering Profile

Pb free reflow soldering Profile



● **SOLDERING IRON**

Basic specification :  $\leq 4$  seconds when 260°C, If temperature is higher, time should be shorter (+10°C→1 sec). Power dissipation of iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

● **REWORK**

Customer must finish rework within  $\leq 3$  sec under 350°C.