



**Opto Plus LED Corp.**  
**0.56" SMD Type LED Display**  
**OPS-S5620LE-GW**  
**OPS-S5621LE-GW**

● **EDIT HISTORY**

Version A: Jan. 08, 2013

Preliminary spec.

Version B: Mar. 25, 2014

1. Add package spec.
2. Add Bin and Hue data.

Version C: Jun. 04, 2015

1. Modify IV max data, from 50 to 70 mcd
2. Add Bin grade N.
3. Modify mechanical dimensions.

| Manufacture | Examination | Approving |
|-------------|-------------|-----------|
|             |             |           |



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● **FEATURES**

- 0.56 inch (14.20 mm) Digit Height.
- SMD type.
- Low current operation.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The OPS-S5620LE-GW & OPS-S5621LE-GW are 0.56 inch (14.20 mm) height Single digit 7-segment displays.

This device utilizes Super Bright Red LED chip which are made from AlGaInP On a transparent GaAs, substrate.

The display has Gray face, White segment.

● **DEVICE**

| PART NO        | DESCRIPTION    |
|----------------|----------------|
| OPS-S5620LE-GW | Common Anode   |
| OPS-S5621LE-GW | Common Cathode |

**RoHS Compliance**



**Pb free.**



Version: C Date: 06/04/2015

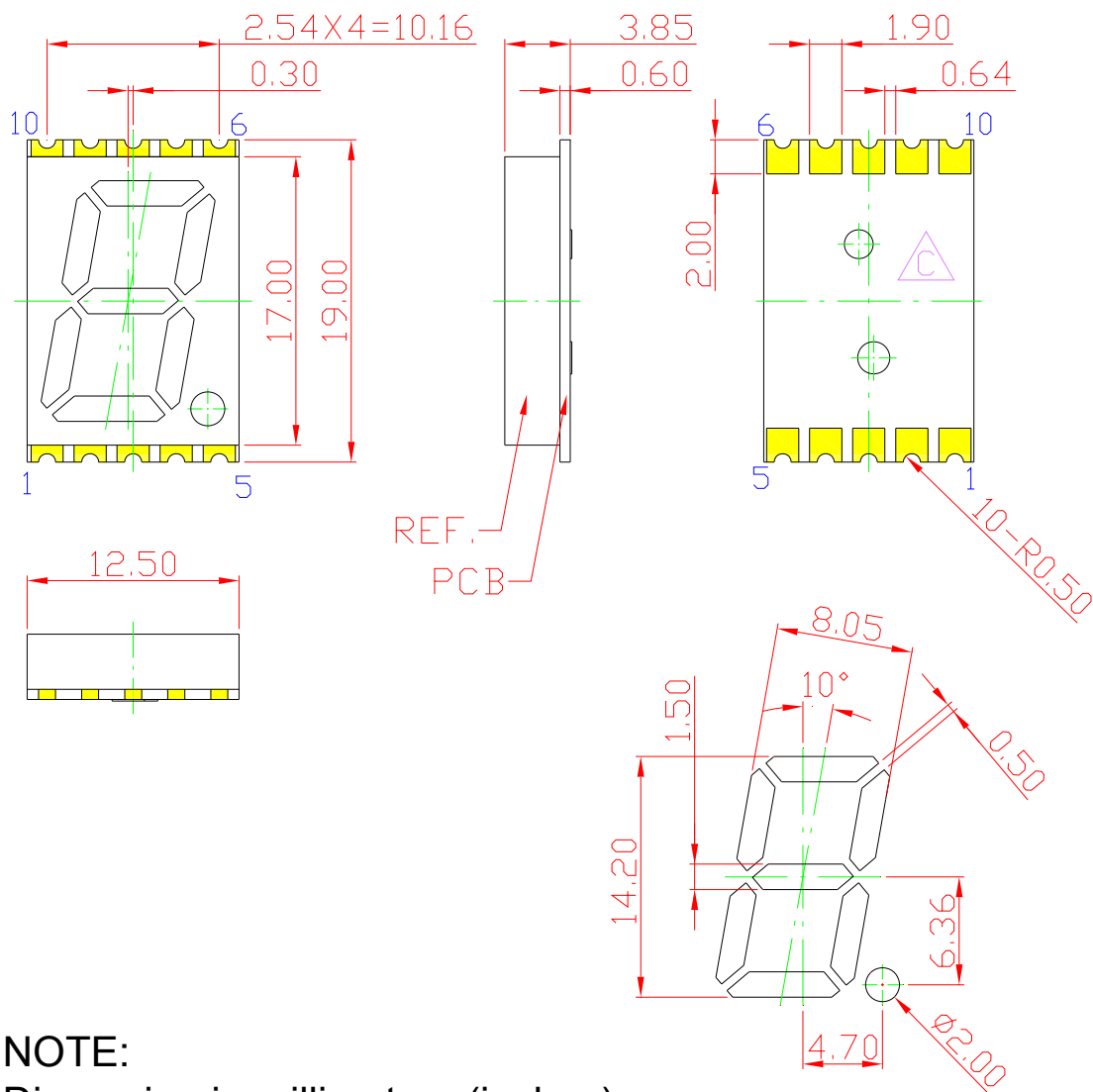
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Website: [www.opled.com.tw](http://www.opled.com.tw) E-mail: [sales@opled.com.tw](mailto:sales@opled.com.tw) Tel: 886-2-2222-5698 Fax: 886-2-2222-2566



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● **MECHANICAL DIMENSIONS**



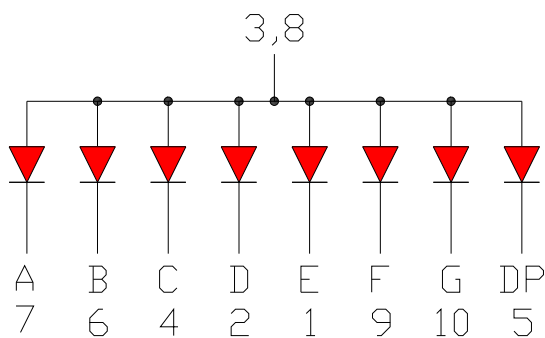
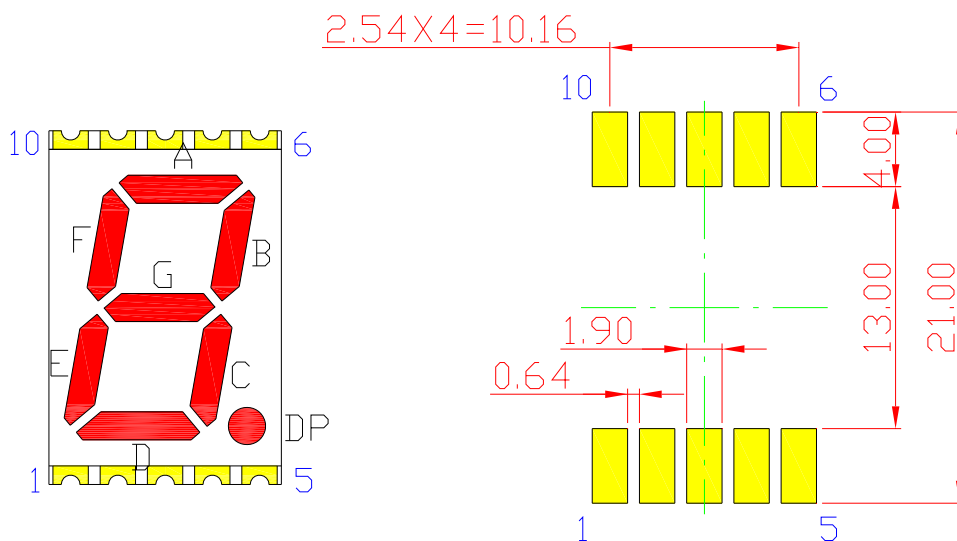
**NOTE:**  
 Dimension in millimeters (inches),  
 and tolerances are  $\pm 0.25\text{mm}$  (.01") specified.



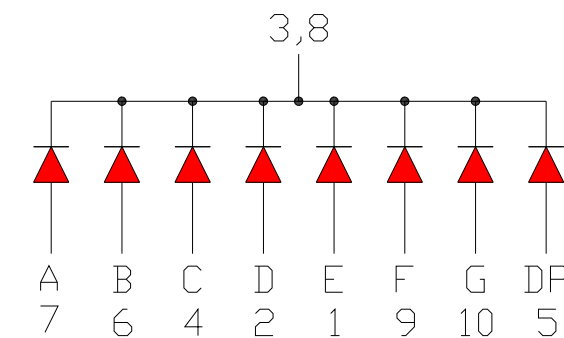
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● **TYPICAL INTERNAL EQUIVALENT CIRCUIT**

**Recommended Soldering Pattern**



**OPS-S5620LE-GW**  
**( Common Anode )**



**OPS-S5621LE-GW**  
**( Common Cathode )**



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● **LE: SUPER BRIGHT RED (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| Parameter                            | Symbol    | Maximum Rating | Unit    |
|--------------------------------------|-----------|----------------|---------|
| Power dissipation                    | $P_{AD}$  | 70             | mW      |
| Derating liner from 25°C             | -         | 0.28           | mA / °C |
| Continuous forward current           | $I_{AF}$  | 25             | mA      |
| Peak current (duty cycle 1/10, 1kHz) | $I_{PF}$  | 90             | 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)  | $V_F$           | $I_F = 20\text{mA}$ | -    | 2.0   | 2.6  | V             |
| Reverse Current, (Per Dice)  | $I_R$           | $V_R = 5\text{V}$   | -    | -     | 10   | $\mu\text{A}$ |
| Peak Wavelength              | $\lambda_P$     | $I_F = 20\text{mA}$ | -    | 632   | -    | nm            |
| Dominant Wavelength          | $\lambda_D$     | $I_F = 20\text{mA}$ | 619  | -     | 629  | nm            |
| Luminous Intensity           | $I_v$           | $I_F = 20\text{mA}$ | 10   | -     | 70   | mcd           |
| Spectral radiation bandwidth | $\Delta\lambda$ | $I_F = 20\text{mA}$ | -    | 20    | -    | nm            |



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● **LE: BIN GRADE (Unit : mcd / I<sub>F</sub> =20mA)**

|                         | <b>K</b>    | <b>L</b>    | <b>M</b>    | <b>N</b>    |
|-------------------------|-------------|-------------|-------------|-------------|
| <b>Super Bright Red</b> | 10.0 - 20.0 | 20.1 - 35.0 | 35.1 - 50.0 | 50.1 - 70.0 |

● **LE: HUE GRADE ( $\lambda_D$  : nm)**

| <b>1</b>      | <b>2</b>      | <b>3</b>      |
|---------------|---------------|---------------|
| 619.0 – 622.0 | 622.1 – 626.0 | 626.1 – 629.0 |

● **AVAILABLE BIN / HUE TABLE**

|    |    |    |    |
|----|----|----|----|
| K1 | L1 | M1 | N1 |
| K2 | L2 | M2 | N2 |
| K3 | L3 | M3 | N3 |



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## 0.56" SMD Type LED Display

### OPS-S5620LE-GW

### OPS-S5621LE-GW

#### ● LE: SUPER BRIGHT RED (AlGaInP/GaAs) CURVE

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

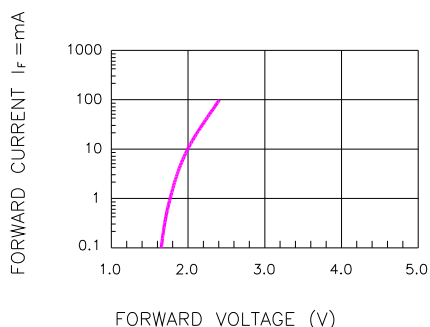


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

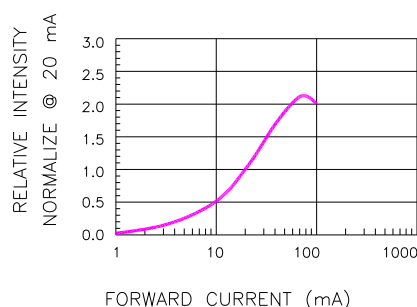


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

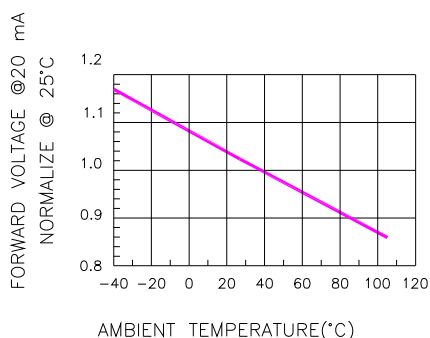


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

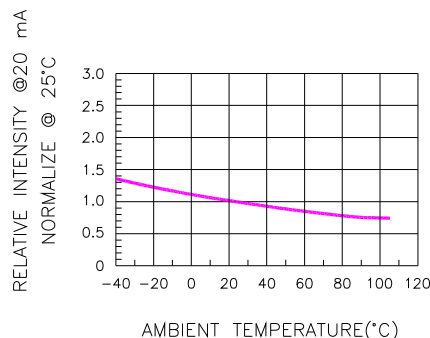


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

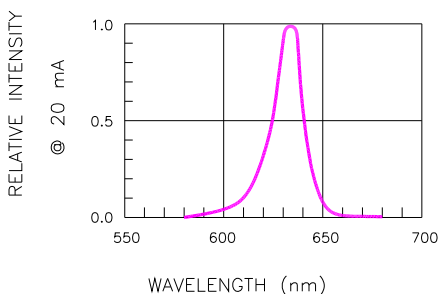


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

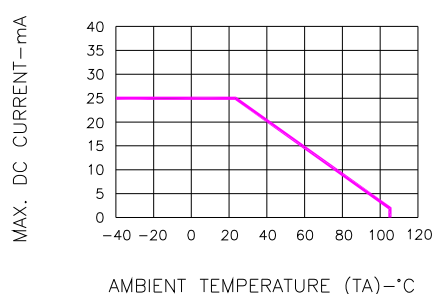


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

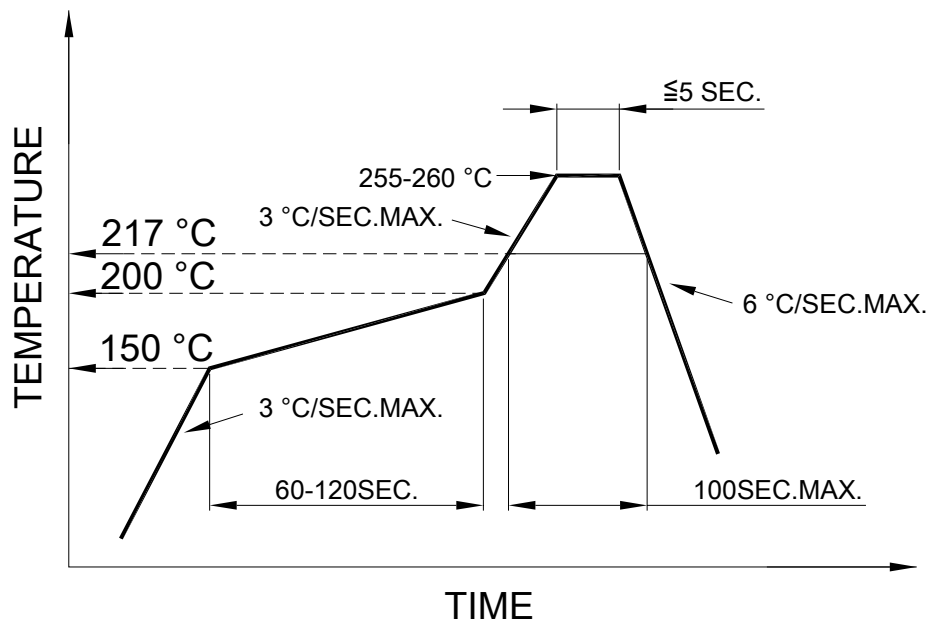


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● **SMT REFLOW SOLDERING INSTRUCTIONS**

SMT Soldering Profile

Pb free reflow soldering Profile



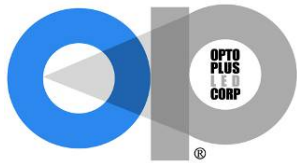
● **SOLDERING IRON**

Basic spec is  $\leq 4$  sec 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**

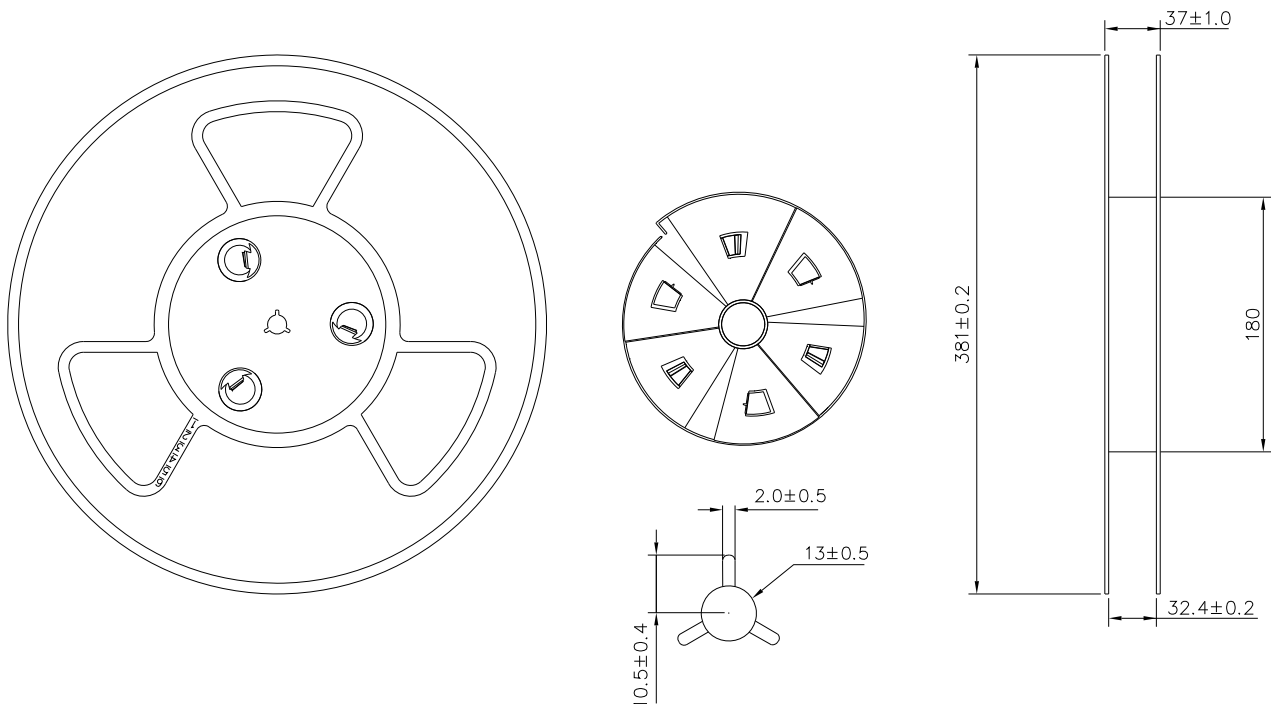
- Customer must finish rework within 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.
- Number of reflow process shall be times or less.





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● **REEL DIMENSIONS**



● **PACKING & LABEL SPECIFICATIONS**

