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Opto Plus LED Corp.
0.50" Case Mold Type LED Display
OPD-AS5010LE | OPD-AS5011LE

● **EDIT HISTORY**

Version A: Nov. 04, 2020

Preliminary Spec.



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● **FEATURES**

- 0.50 inch (12.7 mm) Digit Height.
- Low current operation.
- Case mold type.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The device are 0.50 inch (12.7 mm) height character alphanumeric display.

The device is Opto Plus LED Corp standard LED Display.

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

The device has face and segment option, please refer to **PRODUCT APPEARANCE**.

● **DEVICE**

| | PART NO. | DESCRIPTION |
|--|-----------------|---|
| | OPD-AS5010LE-GW | Common Anode Gray face White segment |
| | OPD-AS5011LE-GW | Common Cathode Gray face White segment |
| | OPD-AS5010LE-BW | Common Anode Black face White segment |
| | OPD-AS5011LE-BW | Common Cathode Black face White segment |

RoHS Compliance



Pb Free.



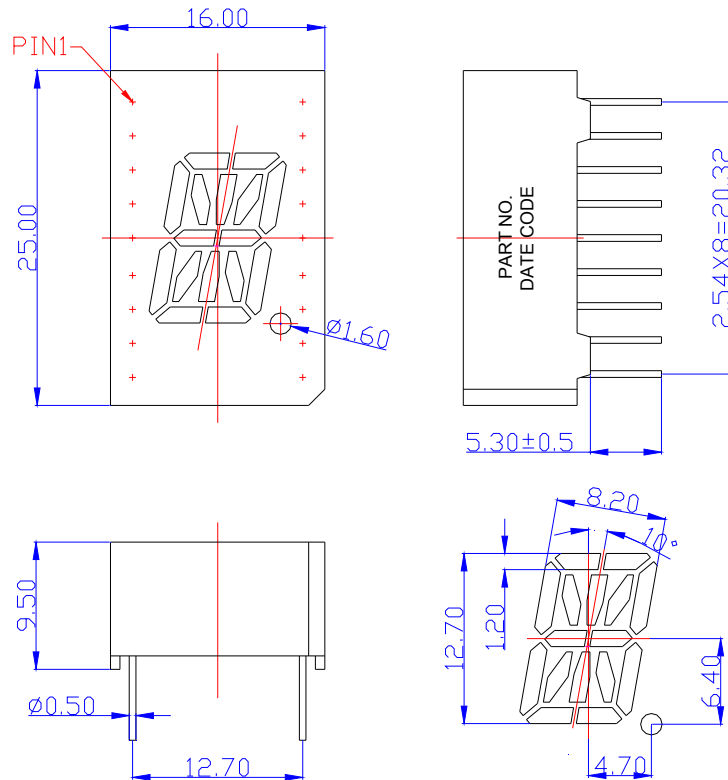


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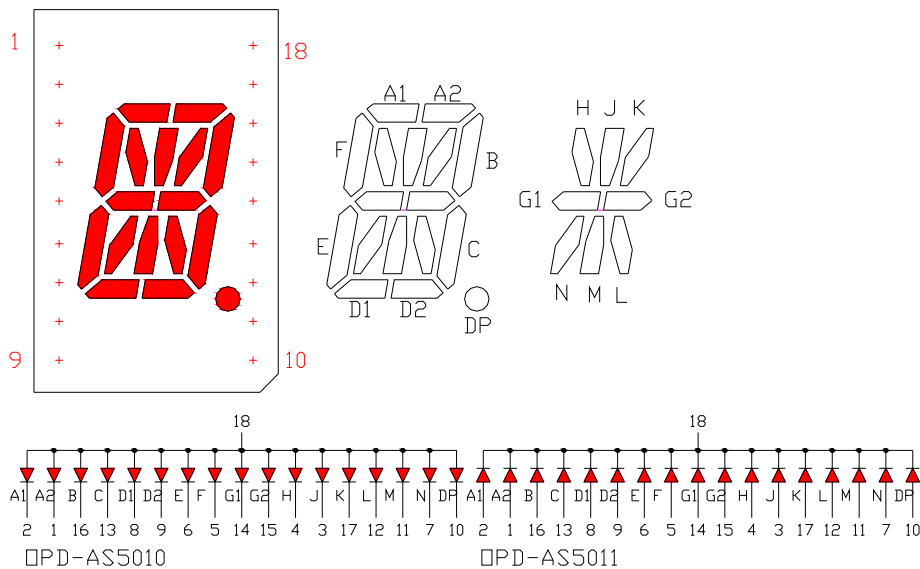
● MECHANICAL DIMENSIONS



NOTES: Dimension is in millimeters. Tolerance is ± 0.25 mm unless otherwise noted.

● TYPICAL INTERNAL EQUIVALENT CIRCUIT

Turn On Color



※EMITTED COLOR : SUPER BRIGHT RED

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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} | 48 | mW |
| Continuous forward current | I_{AF} | 20 | mA |
| Peak current (duty cycle 1/10, 1kHz) | I_{PF} | 40 | mA |
| Reverse voltage | V_R | 5 | V |
| Operating temperature | T_{OPR} | -40 to +85 | °C |
| Storage temperature | T_{STG} | -40 to +85 | °C |

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

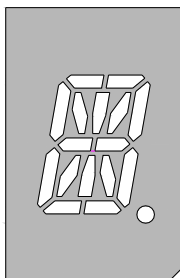
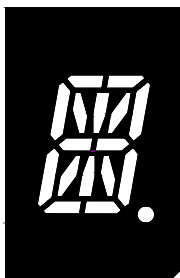
| Characteristic | Symbol | Condition | Min. | Type. | Max. | Unit |
|------------------------------|-----------------|---------------------|------|-------|------|---------------|
| Forward Voltage | V_F | $I_F = 20\text{mA}$ | - | 2.1 | 2.4 | V |
| Reverse Current | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Peak Wavelength | λ_P | $I_F = 20\text{mA}$ | - | 632 | - | nm |
| Dominant Wavelength | λ_D | $I_F = 20\text{mA}$ | 619 | 624 | 629 | nm |
| Luminous Intensity | I_V | $I_F = 20\text{mA}$ | - | 60 | - | mcd |
| Spectral Line Half-Bandwidth | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 20 | - | nm |



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● PRODUCT APPEARANCE

The most common reflector color and segment color are show in below diagram.

| -GW | -BW |
|---|---|
|  |  |
| ※ REFLECTOR COLOR: Gray ※ SEGMENT COLOR: White | ※ REFLECTOR COLOR: Black ※ SEGMENT COLOR: White |

Opto Plus can customize reflector and segment colors by customer's request. If you have these request please visit www.opledtw.com or contact sales@opledtw.com for more **Standard Product Customization** information.

Part NO. related to reflector and segment colors show as table below.

| PART NO. | DESCRIPTION |
|-----------------|---|
| OPD-AS5010LE-GW | Common Anode Gray face White segment |
| OPD-AS5011LE-GW | Common Cathode Gray face White segment |
| OPD-AS5010LE-BW | Common Anode Black face White segment |
| OPD-AS5011LE-BW | Common Cathode Black face White segment |



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

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

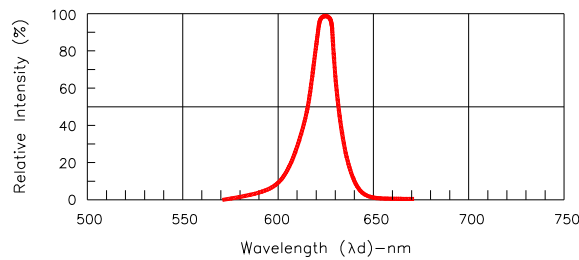


Fig.1-Relative Intensity VS. Wavelength

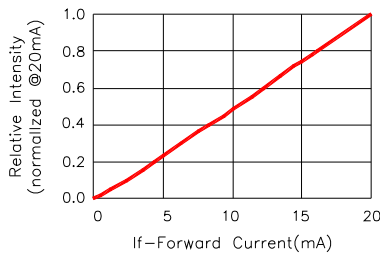


Fig.2-Relative Luminous Intensity vs. Forward Current

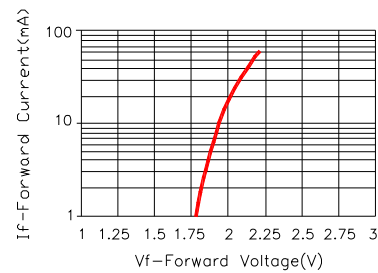


Fig.3-Forward Current vs. Forward Voltage

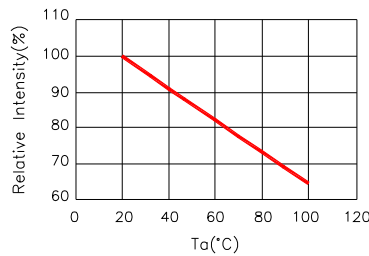


Fig.4-Relative Intensity(@20mA) vs. Ambient Temperature

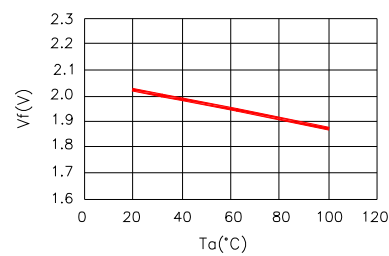


Fig.5-Forward Voltage(@20mA) vs. Ambient Temperature

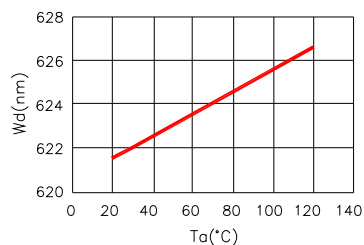


Fig.6-Dominant Wavelength(@20mA) VS. Ambient Temperature

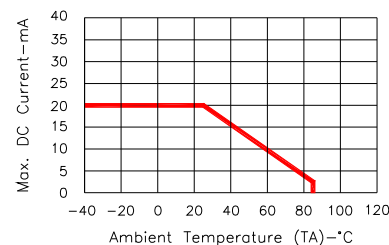


Fig.7-Max. Allowable DC Current VS. Ambient Temperature

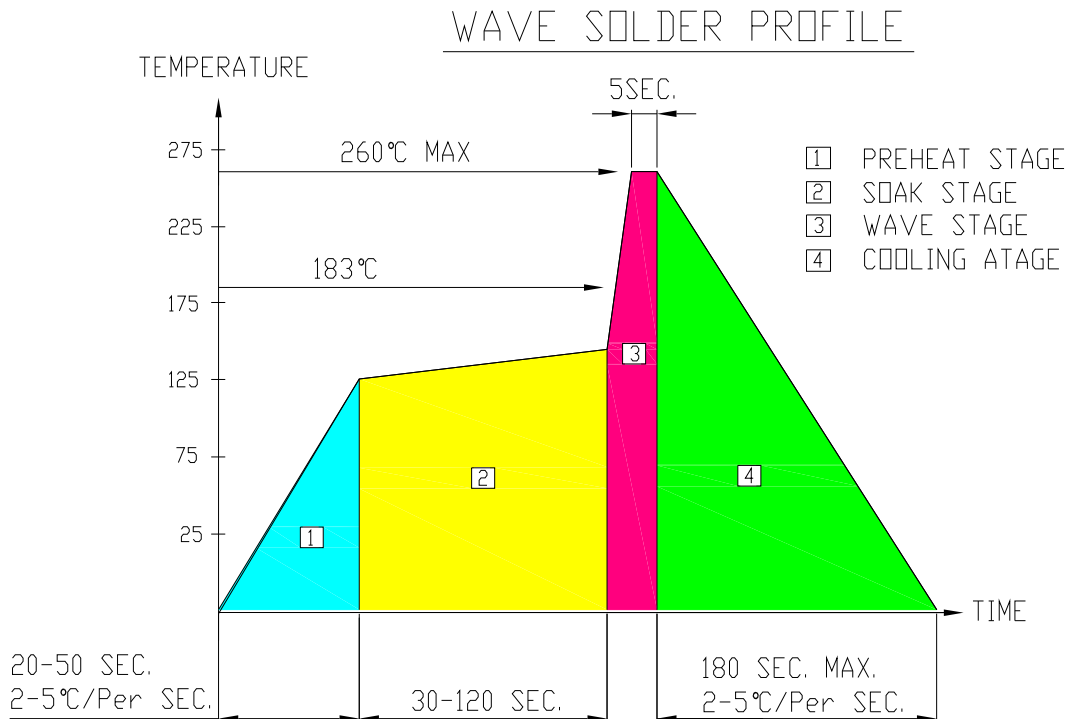


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● RECOMMEND SOLDERING PROFILE



● Note:

- Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
- Peak wave soldering temperature between 245°C ~ 225°C for 3 sec (5 sec max)
- No more than one wave soldering pass

● SOLDERING IRON

Basic spec is ≤ 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.