

Opto Plus LED Corp.
0.4" Case Mold Type LED Display
OPD-S4030LB-BW
OPD-S4031LB-BW

● **FEATURES**

- 0.4 inch (10.16 mm) Digit Height.
- Low current operation.
- Case mold type.
- Black face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The OPD-S4030LB-BW & OPD-S4031LB-BW are 0.4 inch (10.16 mm) height single 7-segment display.

This device utilizes Super Bright Blue LED chip which are made from InGaN on a transparent GaN substrate.

The display has Black face, White segment.

● **DEVICE**

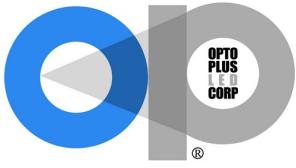
| PART NO | DESCRIPTION |
|-------------------|--------------------|
| Super Bright Blue | |
| OPD-S4030LB-BW | Common Anode |
| OPD-S4031LB-BW | Common Cathode |

RoHS Compliance



Pb free.





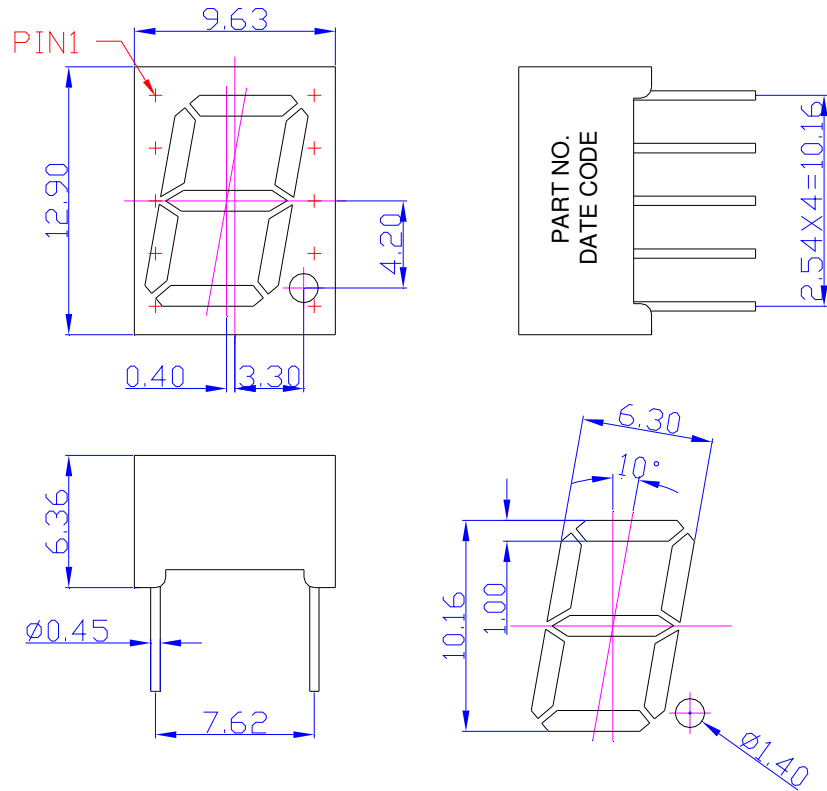
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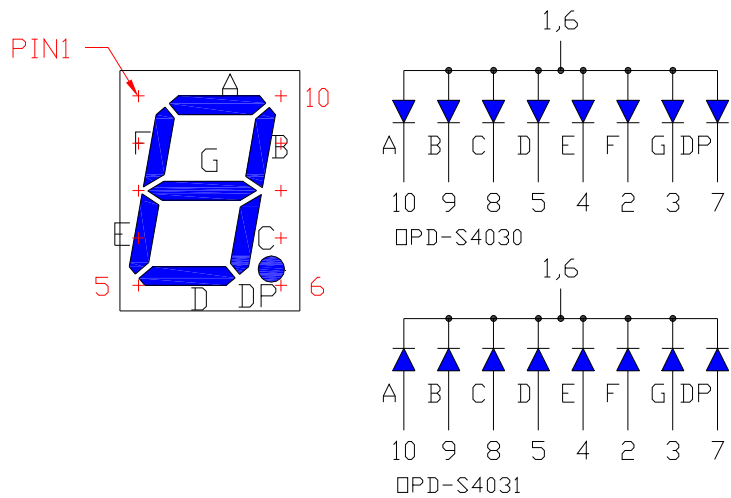
OPD-S4031LB-BW

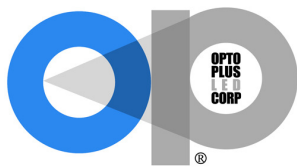
MECHANICAL DIMENSIONS



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

TYPICAL INTERNAL EQUIVALENT CIRCUIT





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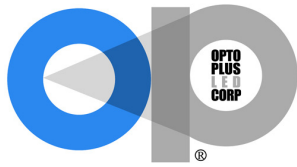
● **LB: SUPER BRIGHT BLUE (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| Parameter | Symbol | Super Bright Blue | Unit |
|---|------------------|-------------------|---------|
| Power dissipation per dice | P _{AD} | 120 | mW |
| Derating liner from 25°C per dice | - | 0.4 | mA / °C |
| Continuous forward current per dice | I _{AF} | 30 | mA |
| Peak current per dice (duty cycle 1/10, 1kHz) | I _{PF} | 100 | mA |
| Reverse voltage per dice | V _R | 5 | V |
| Operating temperature | T _{OPR} | -25 to +85 | °C |
| Storage temperature | T _{STG} | -25 to +85 | °C |

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

| Characteristic | Symbol | Condition | Min. | Typ. | Max. | Unit |
|------------------------------|----------------|----------------------|------|------|------|------|
| Forward voltage | V _F | I _F =20mA | - | 3.2 | 4.0 | V |
| Reverse current | I _R | V _R =8V | - | - | 10 | μA |
| Dominant wavelength | λ _D | I _F =20mA | - | 470 | - | nm |
| Luminous intensity | I _v | I _F =20mA | - | 60 | - | mcd |
| Spectral radiation bandwidth | Δλ | I _F =20mA | - | 30 | - | nm |



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● LB: SUPER BRIGHT BLUE (InGaN/GaN) CURVE

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

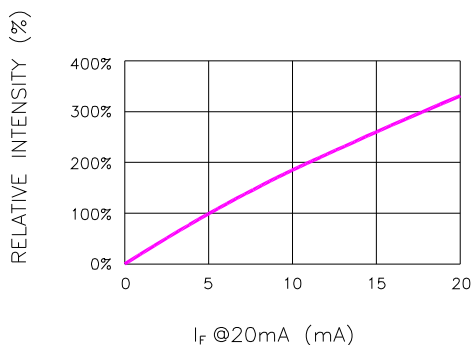


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

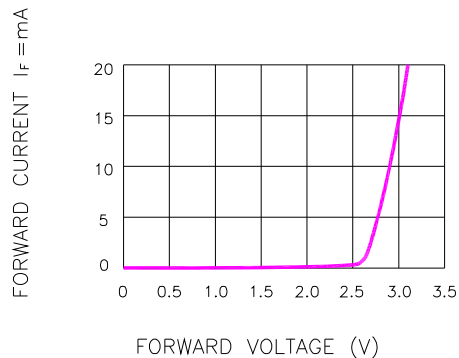


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

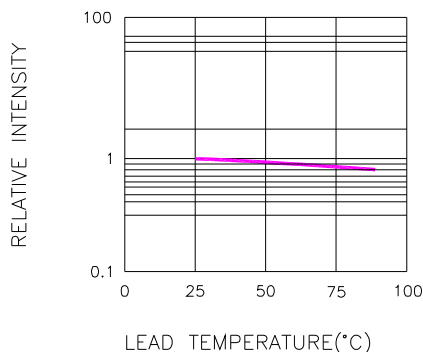


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

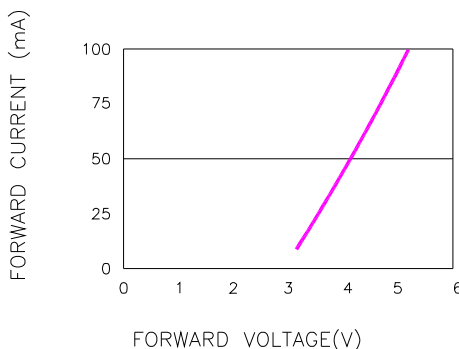


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD (100us TEST PULSE, 1% DUTY CYCLE)

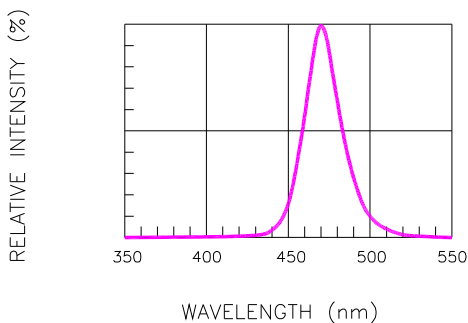


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

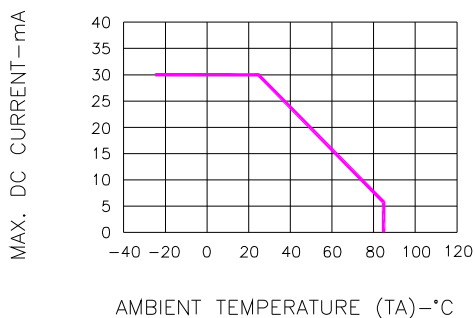
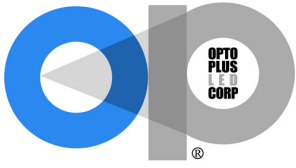
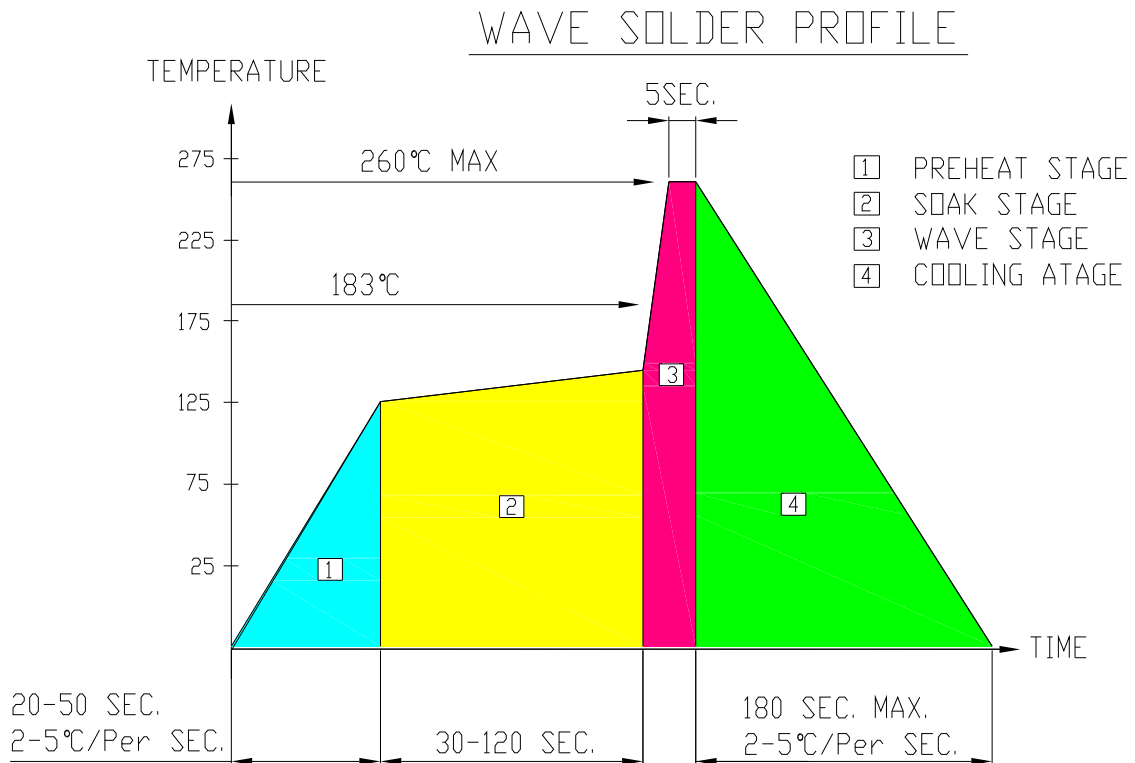


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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● **RECOMMEND SOLDERING PROFILE**



● **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 ≤ 4 sec under 245°C.

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