



American Opto Plus LED Corp.
SMD Type LED Display
SMA-B500LR B/W

● **EDIT HISTORY**

Version A: Nov. 26, 2013

Preliminary spec.

Version B: Jul. 29, 2014

Change P/N to SMA-B500LR B/W.



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● FEATURES

- Bar graph display.
- Excellent character appearance.
- Wide viewing angle.
- Black face, white bar.
- Super Thin SMD Type.
- RoHS compliant, Pb Free.

● DESCRIPTION

The SMA B500LR B/W is a rectangular bar graph display.

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

The display has Black face and white bars.

● DEVICE

| PART NO | DESCRIPTION |
|----------------|--------------|
| Super Red | Common Anode |
| SMA B500LR B/W | |

RoHS Compliance



Pb free.



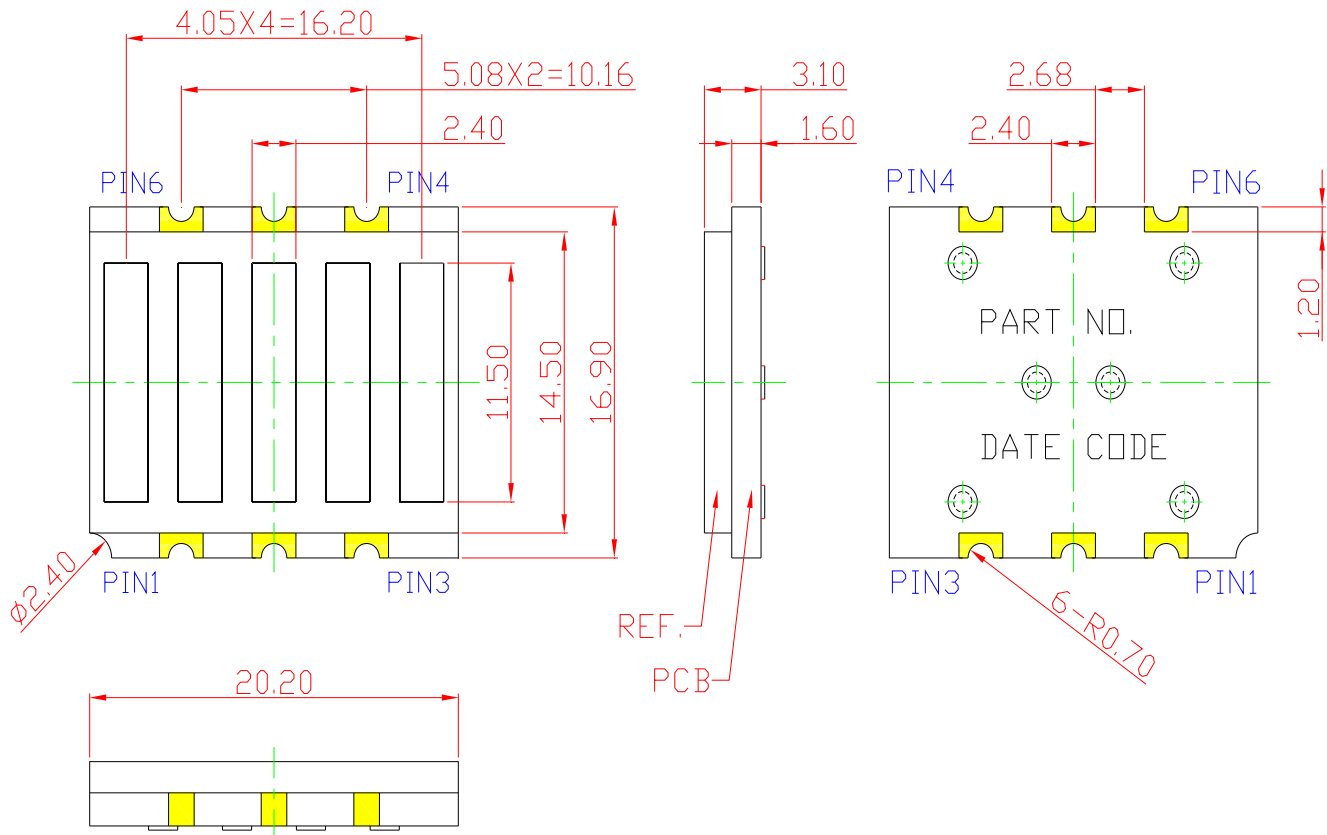


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● MECHANICAL DIMENSIONS



NOTE:

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



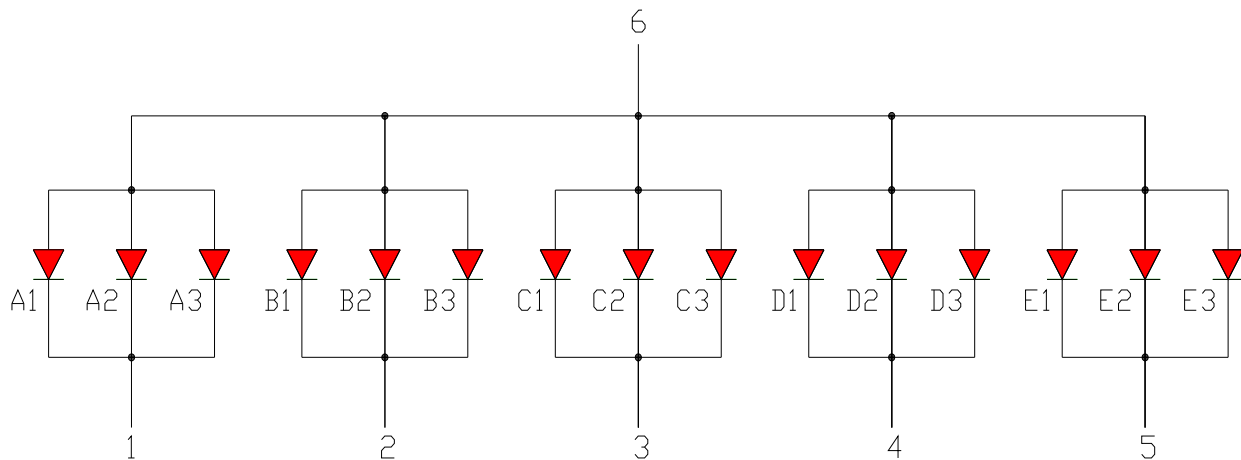
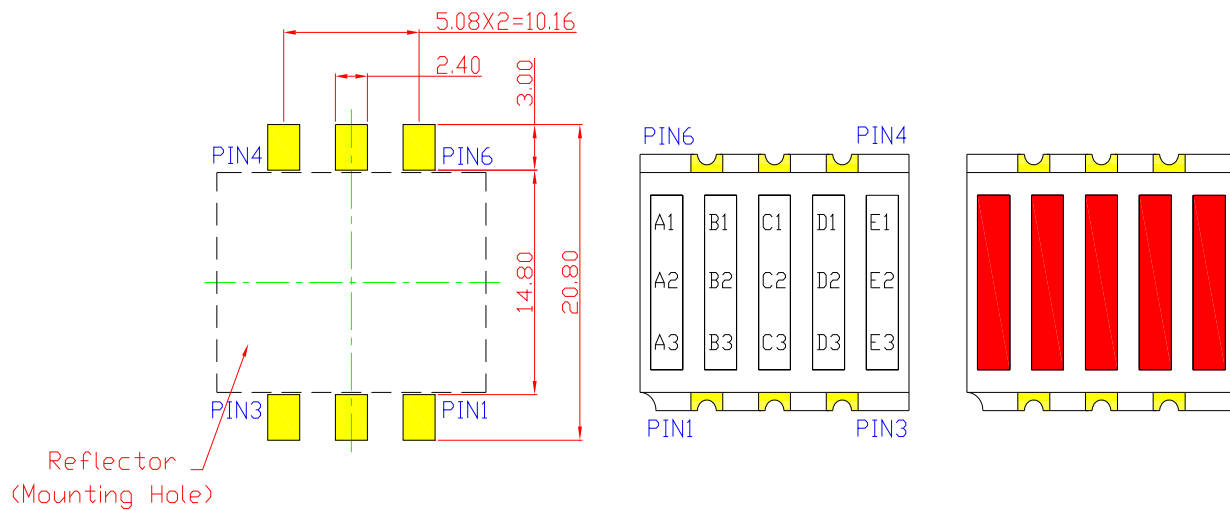
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● INTERNAL CIRCUIT DIAGRAM PIN CONNECTION

Recommended
Reverse Mount
Solder Pattern





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● LR: SUPER RED (AlGaInP/GaAs)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| Parameter | Symbol | Maximum Rating | Unit |
|--------------------------------------|------------------|----------------|---------|
| Power dissipation | P _{AD} | 75 | 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 =20mA | - | 2.0 | 2.6 | V |
| Reverse Current, (Per Dice) | I _R | V _R =5V | - | - | 10 | µA |
| Peak Wavelength | λ _P | I _F =20mA | - | 650 | - | nm |
| Dominant Wavelength | λ _D | I _F =20mA | - | 640 | - | nm |
| Luminous Intensity | I _V | I _F =20mA | - | 8 | - | mcd |
| Spectral radiation bandwidth | Δλ | I _F =20mA | - | 20 | - | nm |



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● LR: SUPER RED (AlGaInP/GaAs) CURVE

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

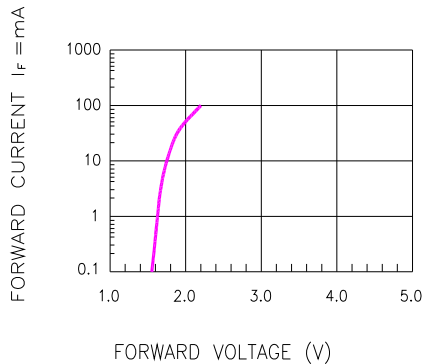


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

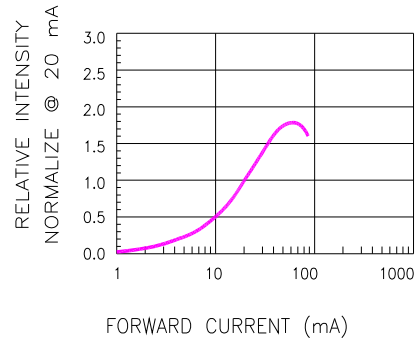


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

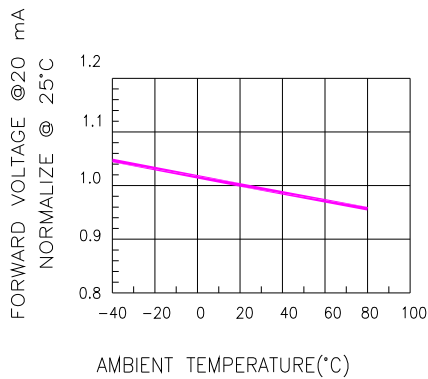


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

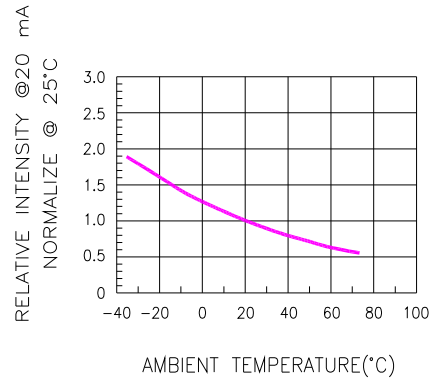


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

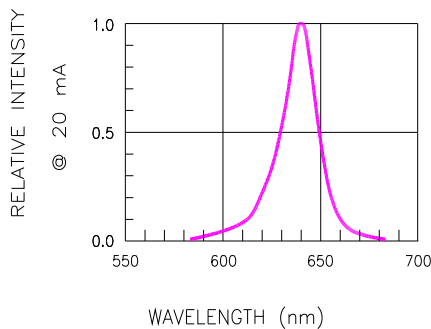


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

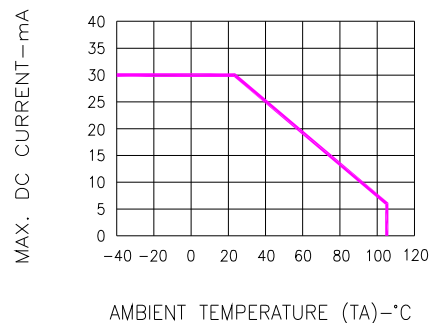


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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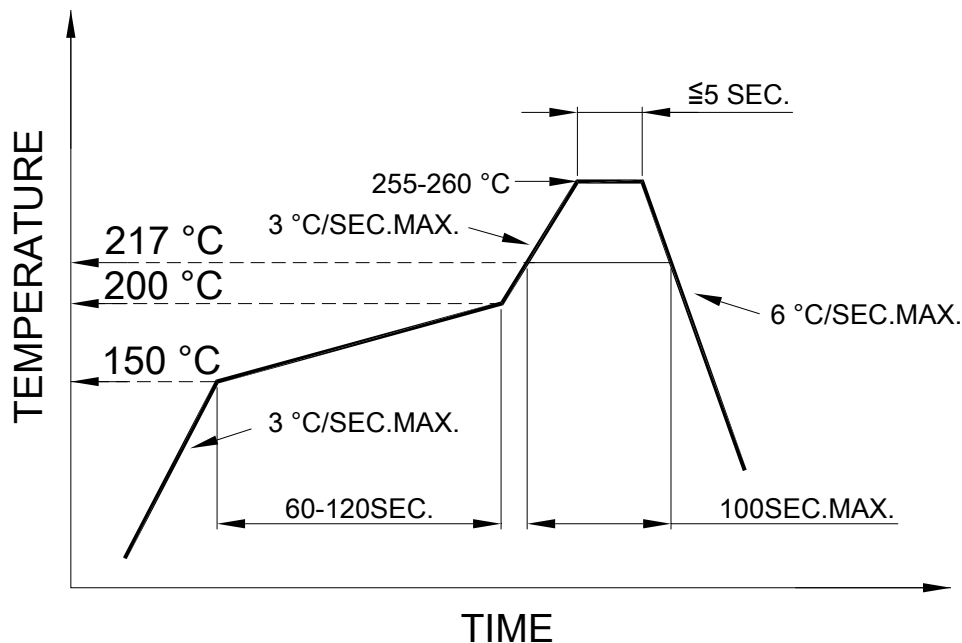
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● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



● SOLDERING IRON

Basic spec is ≤ 4 sec when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow 1$ 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.

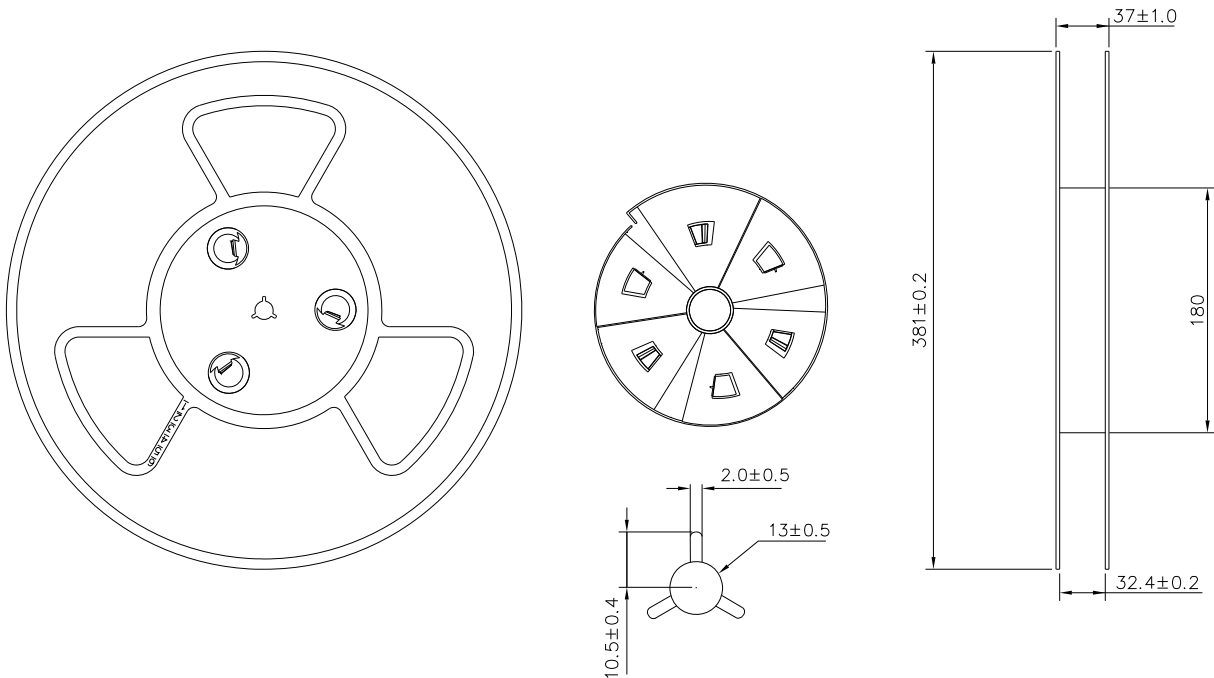


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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS

