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American Opto Plus LED Corp.

SMD Type LED Display

SMA-B500LE

FEATURES

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

DESCRIPTION

The SMA-B500LE is a rectangular bar graph display.

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

The display has Gray face and white bars.

DEVICE

PART NO	DESCRIPTION
Super Bright Red	Common Anode
SMA-B500LE	

RoHS Compliance



Pb free.





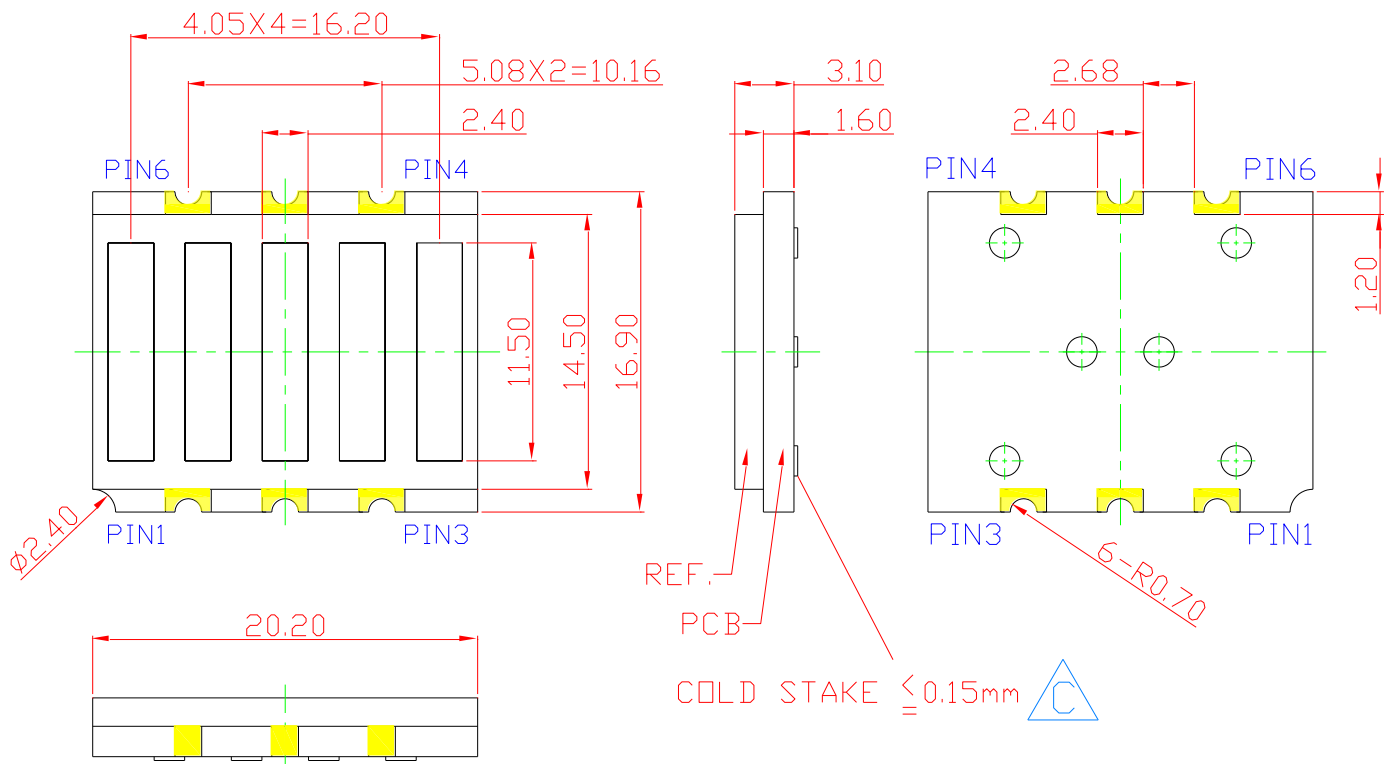
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● MECHANICAL DIMENSIONS



NOTE:

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



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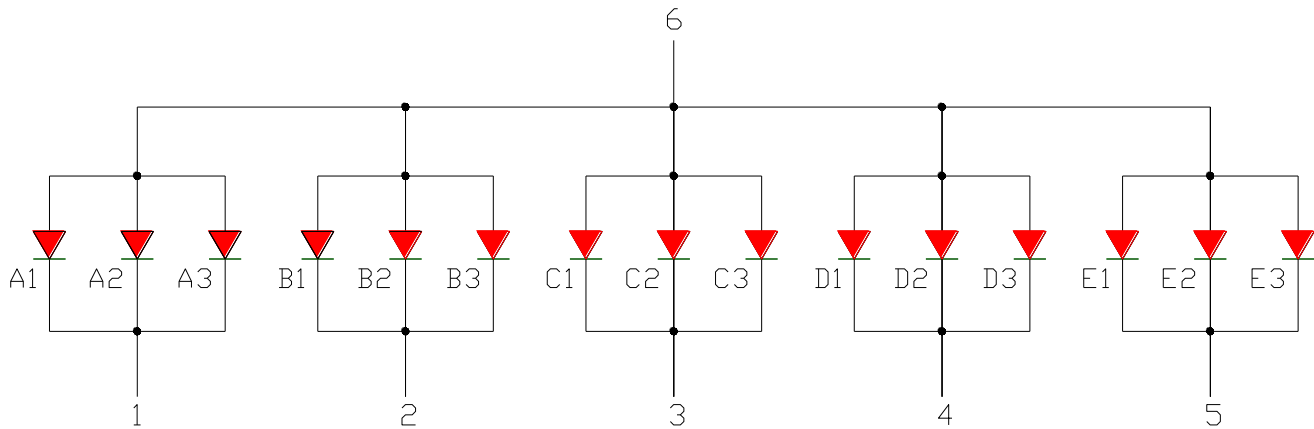
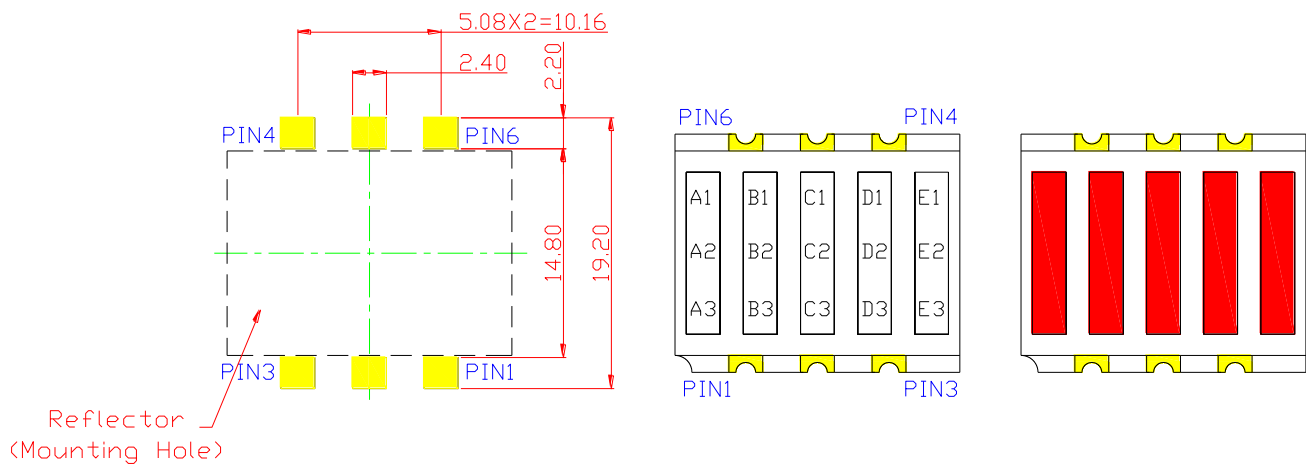
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● INTERNAL CIRCUIT DIAGRAM PIN CONNECTION

Recommended
Reverse Mount
Solder Pattern





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● LE: SUPER BRIGHT RED (AlGaInP/GaAs)

ABSOLUTE MAXIMUM RATING AT $T_a=25^{\circ}\text{C}$

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	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-40 to +85	$^{\circ}\text{C}$

ELECTRICAL - OPTICAL CHARACTERISTICS AT $T_a=25^{\circ}\text{C}$

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage, (Per Dice)	V_F	$I_F=20\text{mA}$	-	2.1	2.4	V
Reverse Current, (Per Dice)	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	-	629	nm
Luminous Intensity	I_V	$I_F=20\text{mA}$	-	50	-	mcd
Spectral Line Half-Bandwidth	$\Delta\lambda$	$I_F=20\text{mA}$	-	20	-	nm



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

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

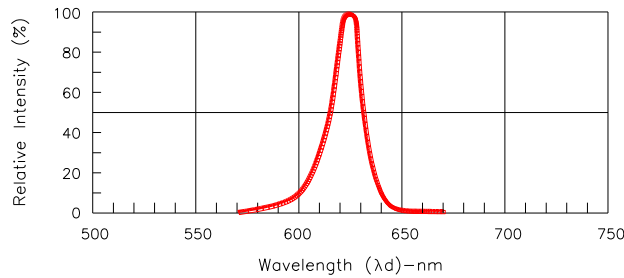


Fig.1-Relative Intensity VS. Wavelength

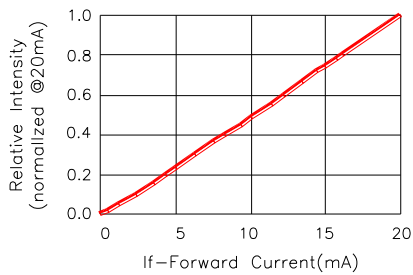


Fig.2-Relative Luminous Intensity vs. Forward Current

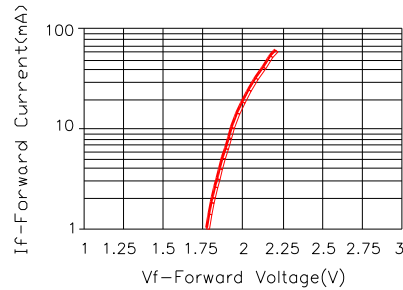


Fig.3-Forward Current vs. Forward Voltage

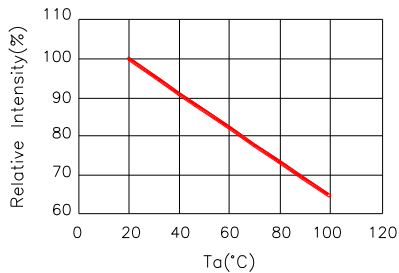


Fig.4-Relative Intensity(@20mA) vs. Ambient Temperature

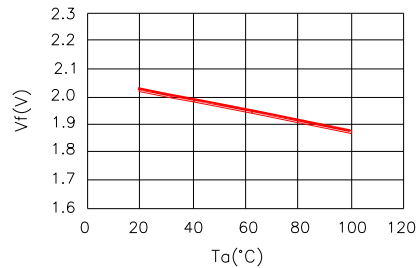


Fig.5-Forward Voltage(@20mA) vs. Ambient Temperature

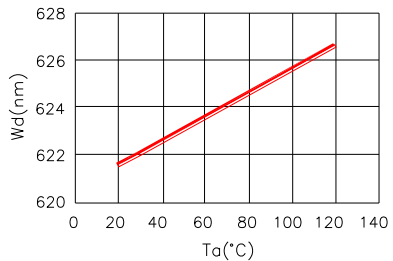


Fig.6-Dominant Wavelength(@20mA)
VS. Ambient Temperature

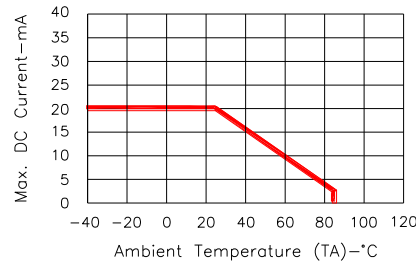


Fig.7-Max. Allowable DC Current
VS. Ambient Temperature



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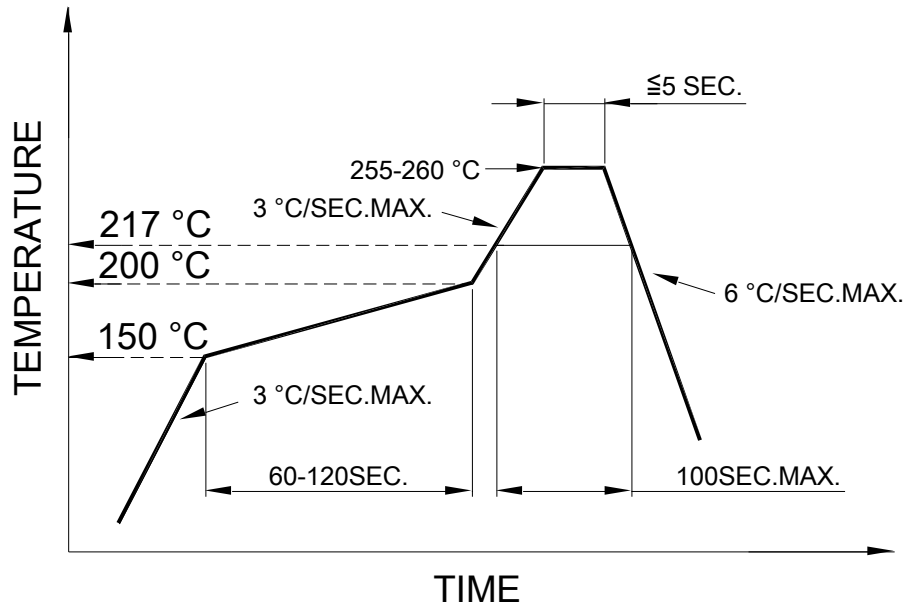
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● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



- We recommend the reflow temperature 245°C (+/- 5°C).
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

● 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.



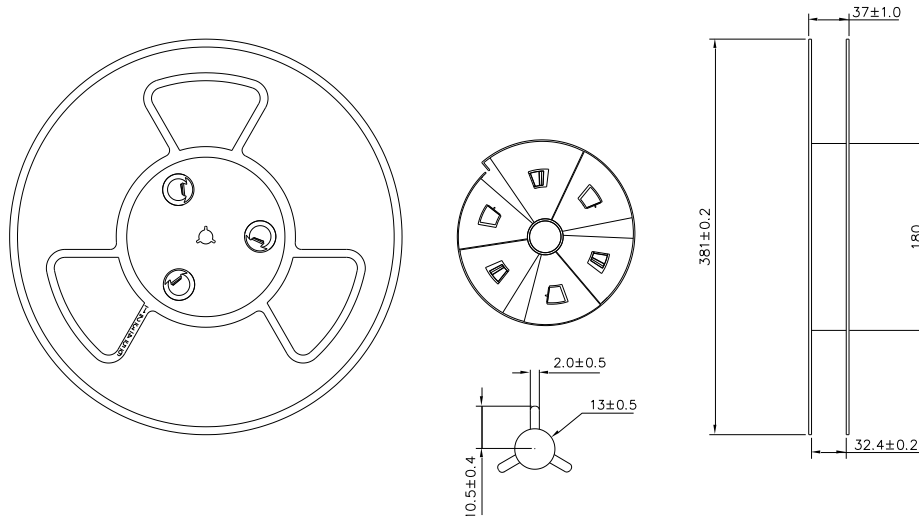
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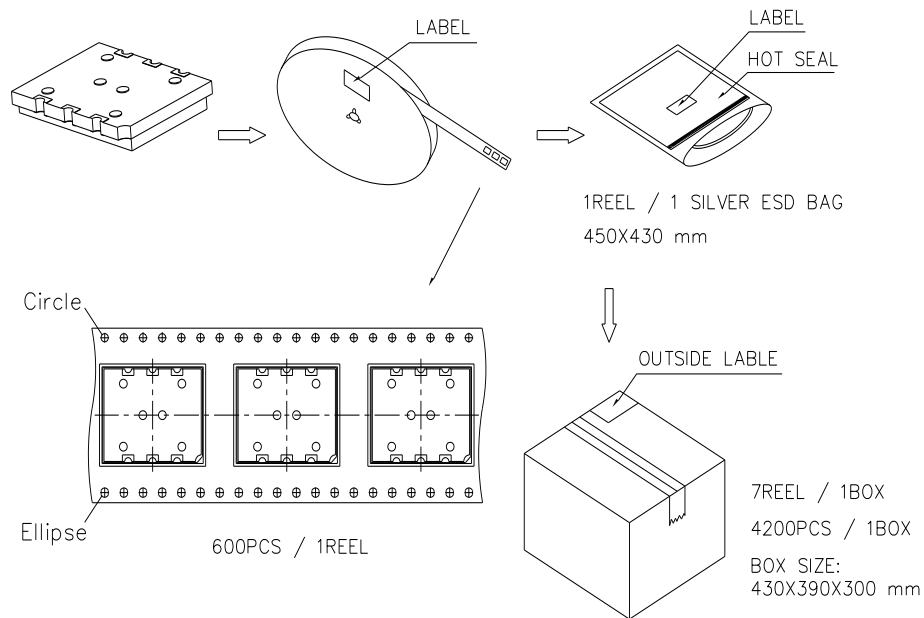
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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS



● STORAGE CONDITION

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)