



American Opto Plus LED Corp.
SMD Type LED Display
SMA-B500W G/W

● **EDIT HISTORY**

Version A: Aug. 06, 2013

Preliminary spec.

Version B: Nov. 26, 2013

Add package spec.

Version C: Jun. 03, 2014

Modify electrical optical characteristics.



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SMA-B500W G/W

● 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-B500W G/W is a rectangular bar graph display.

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

The display has Gray face and white bars.

● DEVICE

PART NO	DESCRIPTION
Super Bright White	Common Anode
SMA-B500W G/W	

RoHS Compliance



Pb free.



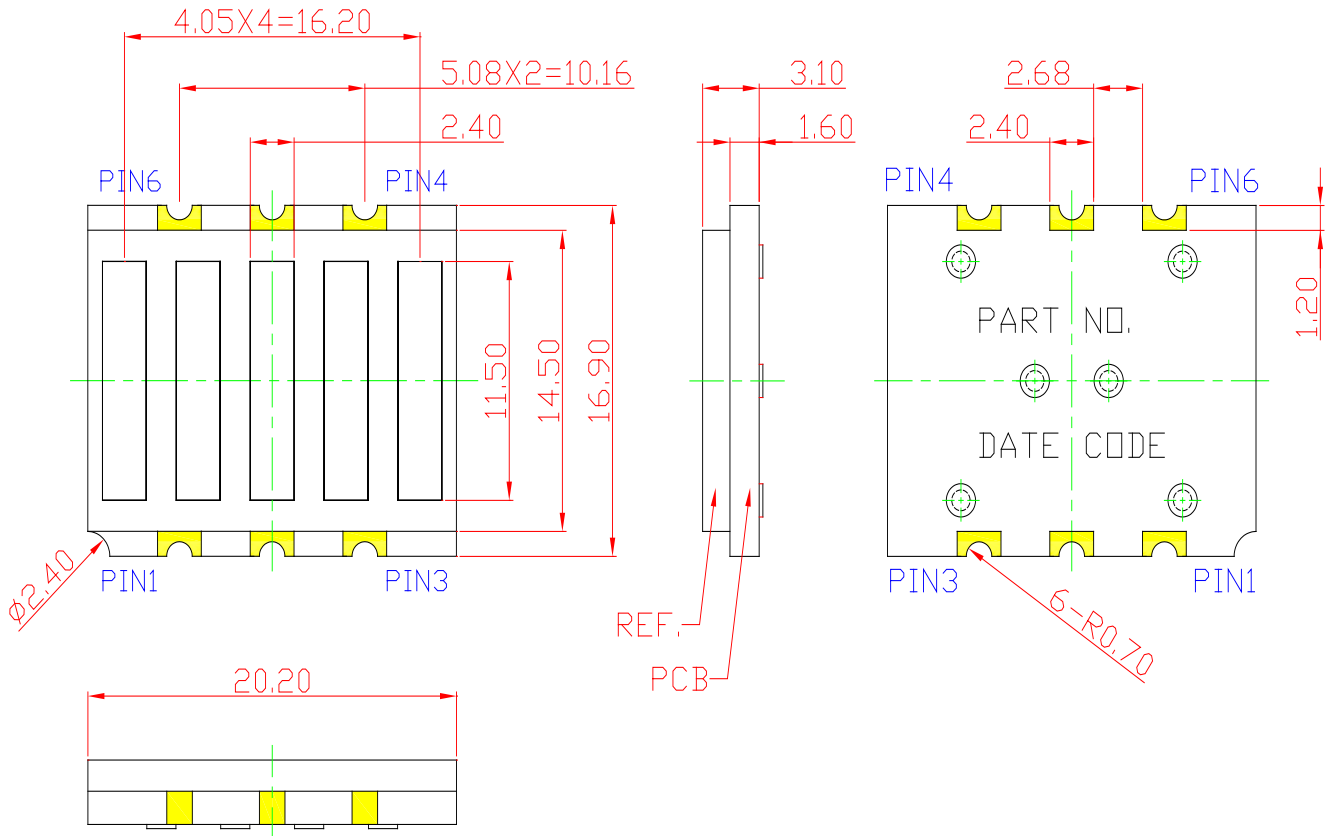


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● MECHANICAL DIMENSIONS



NOTE:

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



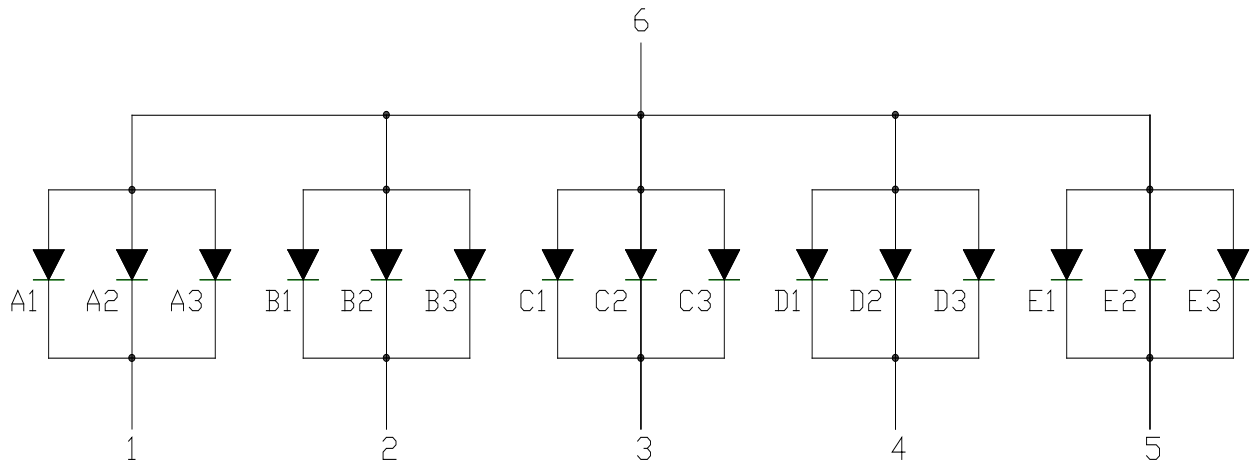
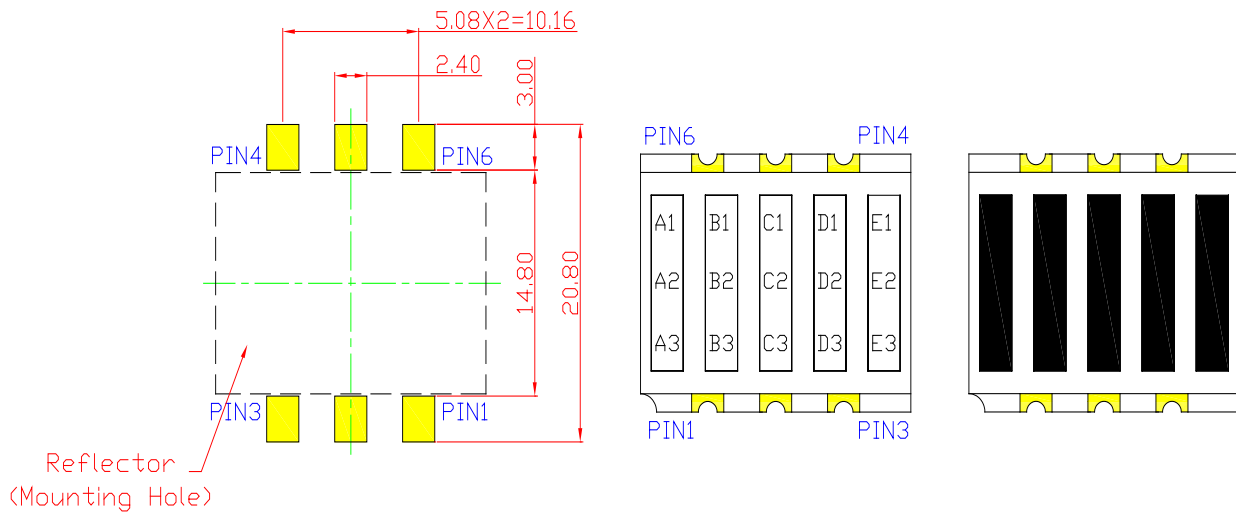
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● INTERNAL CIRCUIT DIAGRAM PIN CONNECTION

Recommended
Reverse Mount
Solder Pattern





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● **W: SUPER BRIGHT WHITE (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P_{AD}	64	mW
Continuous forward current	I_{AF}	20	mA
Peak current (duty cycle 1/10, 1kHz)	I_{PF}	80	mA
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-30 to + 85	°C
Storage temperature	T_{STG}	-40 to + 90	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type	Max.	Unit	
Forward Voltage	V_F	$I_F = 5mA$	-	2.5	3.6	V	
Reverse Current	I_R	$V_R = 5V$	-	-	10	μA	
Dominant Wavelength	λ_D	$I_F = 5mA$	X	-	0.29	-	nm
			Y	-	0.28	-	
Average Luminous Intensity	I_V	$I_F = 5mA$	-	30	-	mcd	
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F = 5mA$	-	30	-	nm	



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● W: SUPER BRIGHT WHITE (InGaN/GaN) CURVE

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

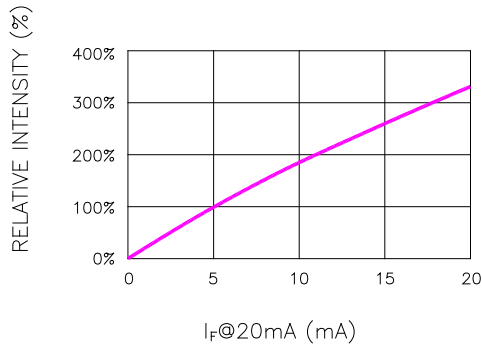


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

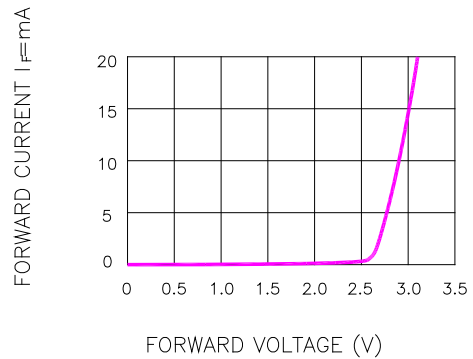


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

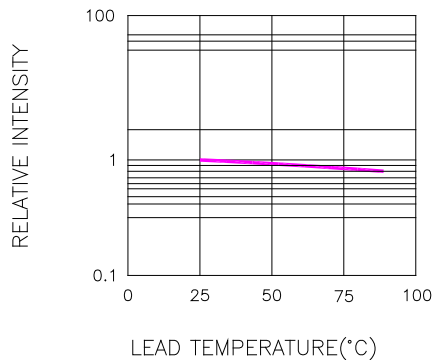


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

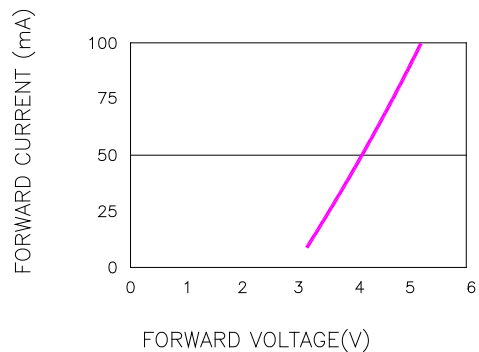


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD (100us TEST PULSE, 1% DUTY CYCLE)

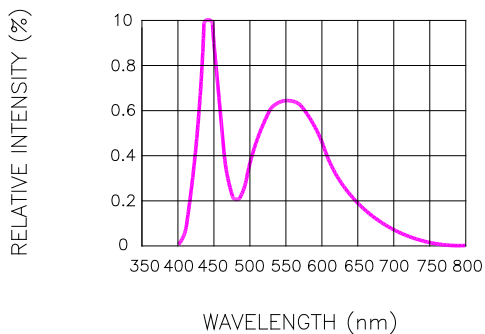


Fig.4 RELATIVE INTENSITY VS. WAVELENGTH

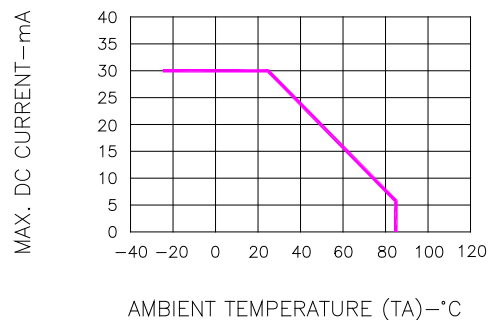


Fig.7 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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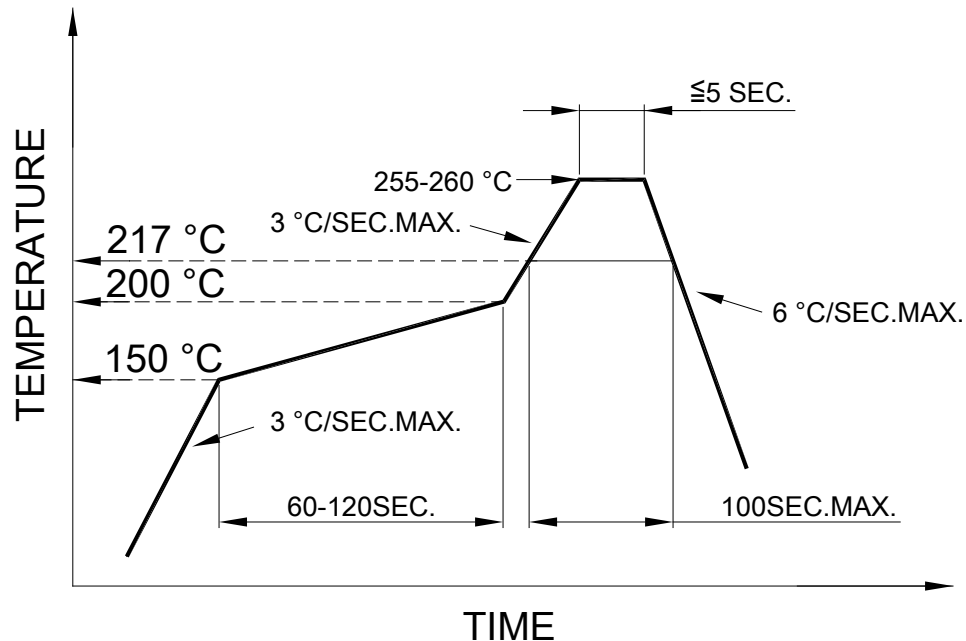
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● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



● 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.

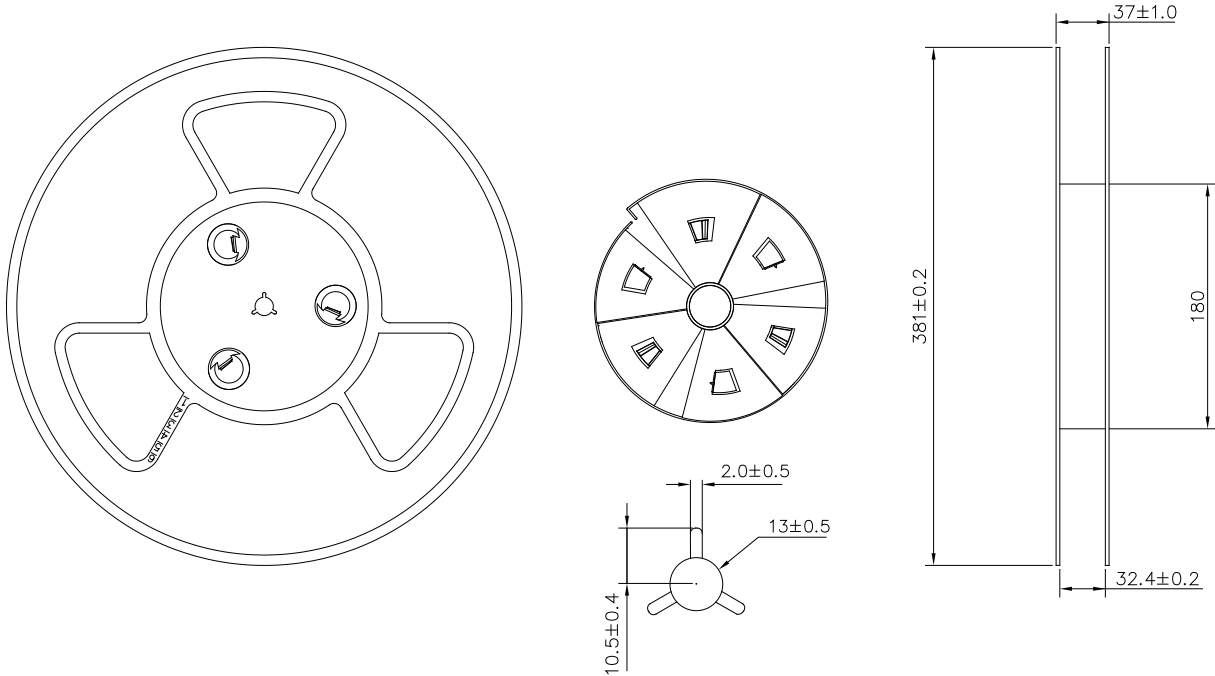


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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS

