

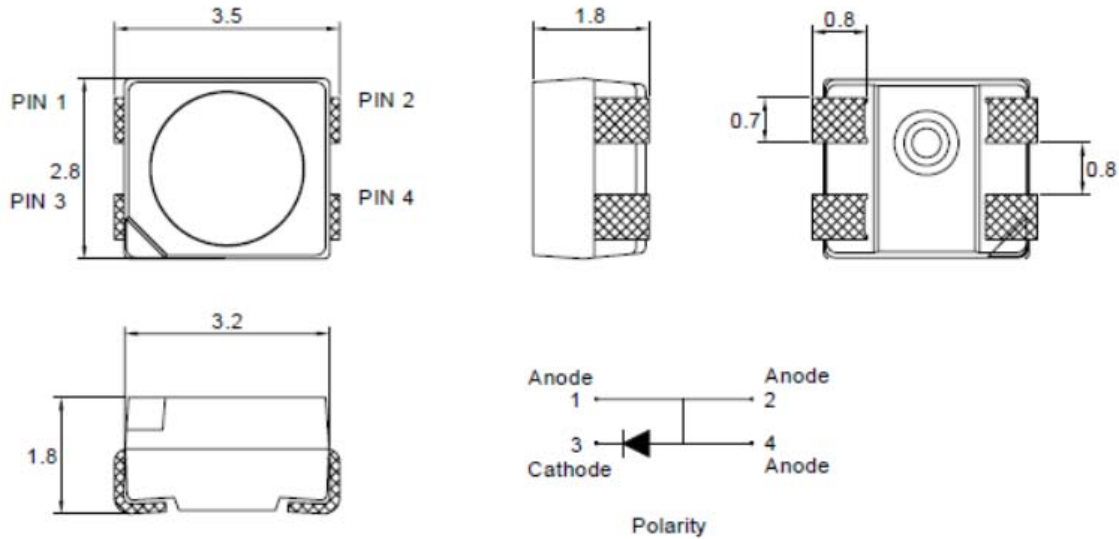


American Opto Plus LED Corp.

SMPL4-MYC-GAM

3.5 x 2.8 x 1.8 mm PLCC4 Yellow SMD LED (Automotive)

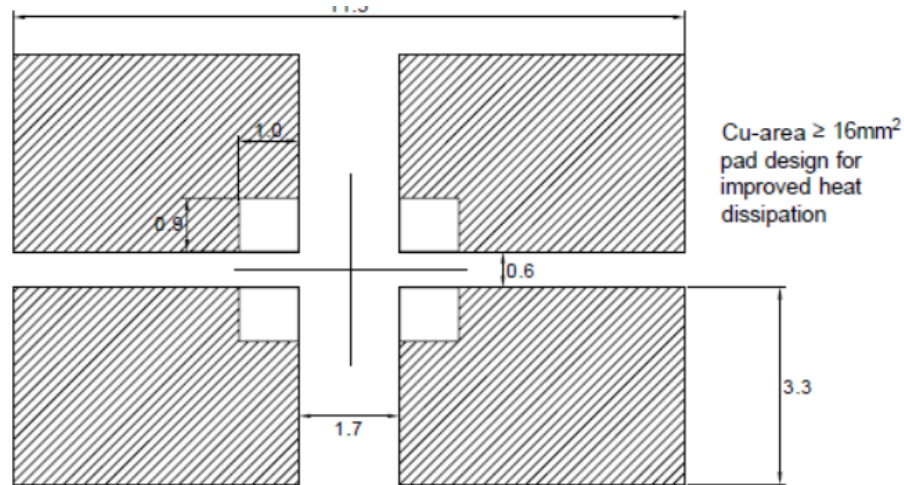
PACKAGE DIMENSION



Notes

1. All dimensions are in millimeters; tolerance is $\pm 0.2\text{mm}$ unless otherwise noted
2. Specifications are subject to change without notice

RECOMMENDED SOLDERING PAD



Notes: All dimensions are in millimeters; tolerance is $\pm 0.1\text{mm}$ unless otherwise noted

Material	Color	
	Emitted	Lens Color
AlGaInP	Yellow	Water Clear



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

	Symbol	Rating	Unit
Forward Current	I _F	70	mA
Forward Peak Current (1/10 duty @10kHz)	I _{FP}	140	mA
Power Dissipation	P _D	196	mW
Reverse Current @12V	I _R	5	μA
Electrostatic Discharge	ESD	2000	V
Operating Temperature	T _{OPR}	-40~+100	°C
Storage Temperature	T _{STG}	-40~+100	°C
Thermal Resistance	Rth j-s	100	K/W
LED Junction Temperature	T _j	125	°C

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

	Symbol	Test Condition	Rating			Unit
			Min.	Typ.	Max.	
Luminous Intensity	I _v	I _F =50mA	1800	2250	3550	mcd
Forward Voltage	V _f		1.9	--	2.8	V
Dominant Wavelength	λ _D		583	590	595	nm
Spectral Line Half-Width	Δλ		--	15	--	nm
Viewing Angle	2Θ _{1/2}		--	120	--	deg

Notes:

1. The Forward voltage data did not include ±0.1V testing tolerance
2. The luminous intensity data did not include ±15% testing tolerance
3. The dominant wavelength data did not including ±1nm testing tolerance.



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LUMINOUS INTENSITY CLASSIFICATION

Bin Code	Iv(mcd) at 50mA	
	Min.	Max.
AA	1120	1400
AB	1400	1800
BA	1800	2240
BB	2240	2800
CA	2800	3550

DOMINANT WAVELENGTH CLASSIFICATION

Bin Code	λ_D (nm) at 50mA	
	Min.	Max.
Y1	583	586
Y2	586	589
Y3	589	592
Y4	592	595

FORWARD VOLTAGE CLASSIFICATION

Bin Code	VF(V) at 50mA	
	Min.	Max.
2	1.90	2.05
3	2.05	2.20
4	2.20	2.35
5	2.35	2.50
6	2.50	2.65
7	2.65	2.80



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TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

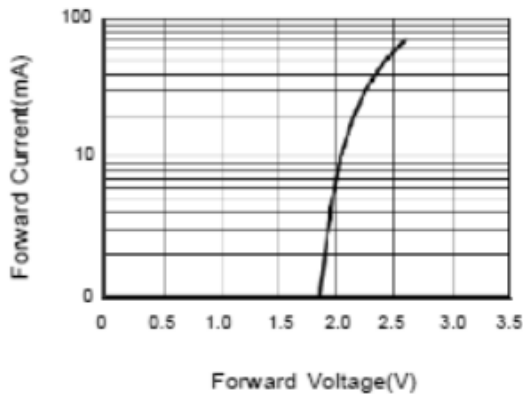


Fig.2 Luminous Intensity vs. Forward Current

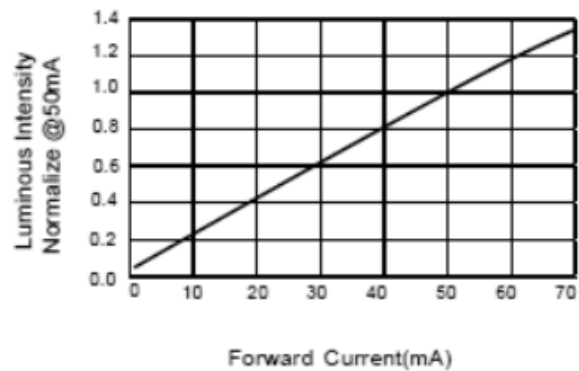


Fig.3 Forward Current vs. Temperature

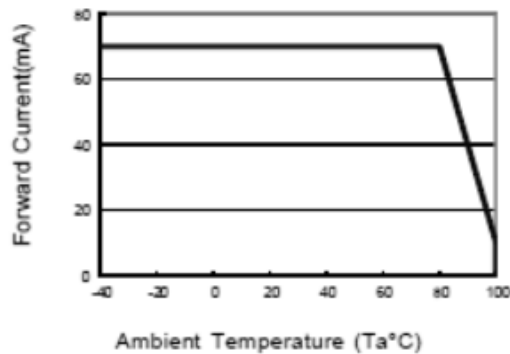


Fig.4 Luminous Intensity vs. Temperature

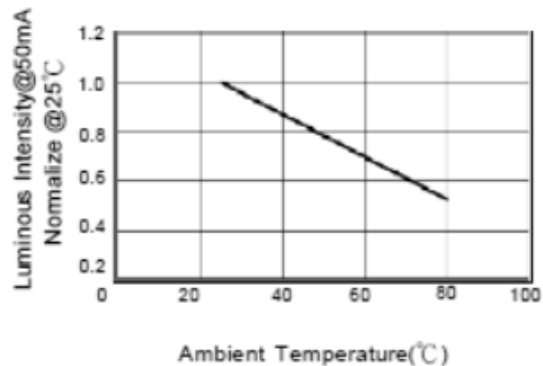


Fig.5 Relative Intensity vs. Wavelength

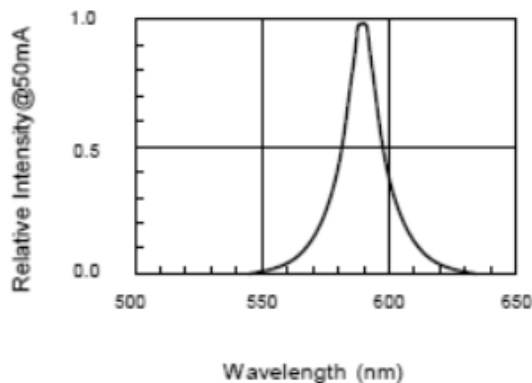
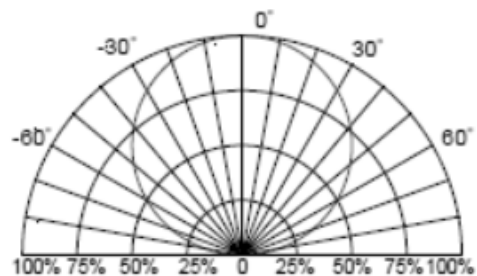


Fig.6 Directive Radiation



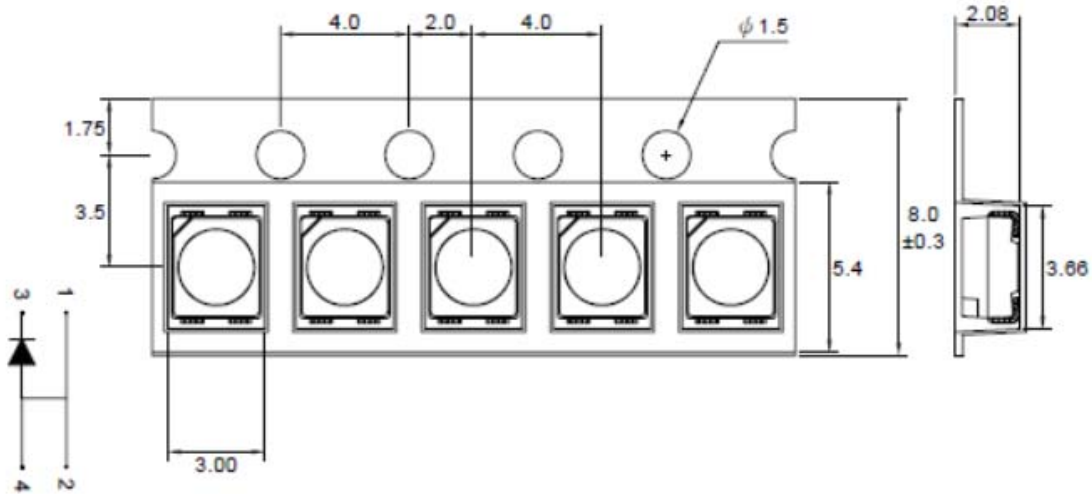


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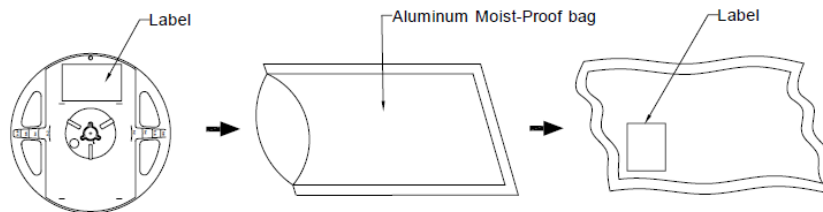
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CARRIER TAPE DIMENSION



Note : Tolerance is ± 0.1 mm, Angle ± 0.5 Unit mm.

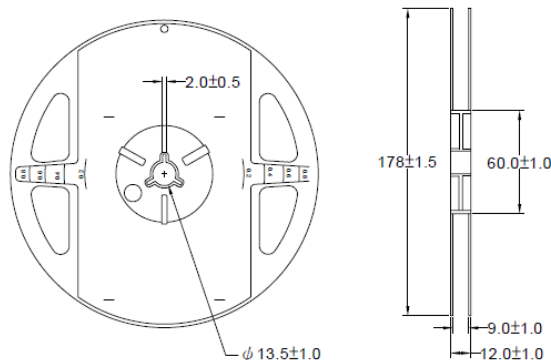
PACKING SPECIFICATIONS



Notes:

1. 8 mm tape
2. 7 inch reel

REEL DIMENSIONS



Notes: 2,000pcs / Reel

Version 1.0 Date: 10/18/2018 Specifications are subject to change without notice.

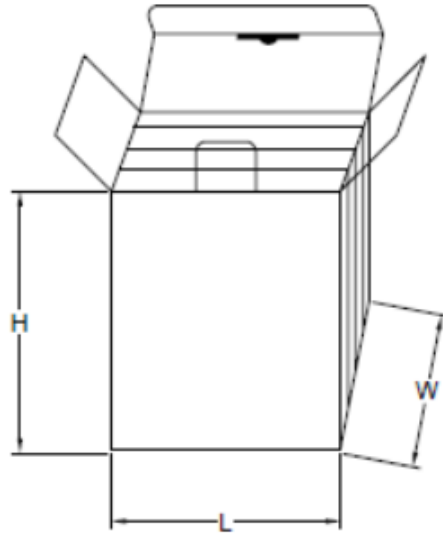
American Opto Plus LED Corp. 1206 E. Lexington Ave., Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com



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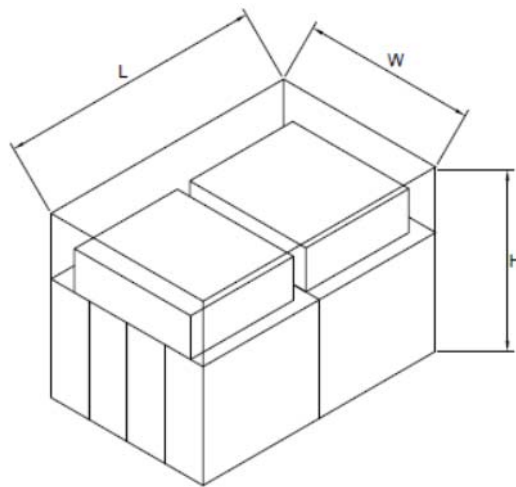
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BOX EXPLANATION



NOTES:

1. 5 BAG / INNER BOX
2. Inner box size : L X W X H 23cm X 8.5cm x 26cm



NOTES:

1. 10 INNER BOXES / CARTON
2. Carton size : L X W X H 58cm X 34cm x 35cm



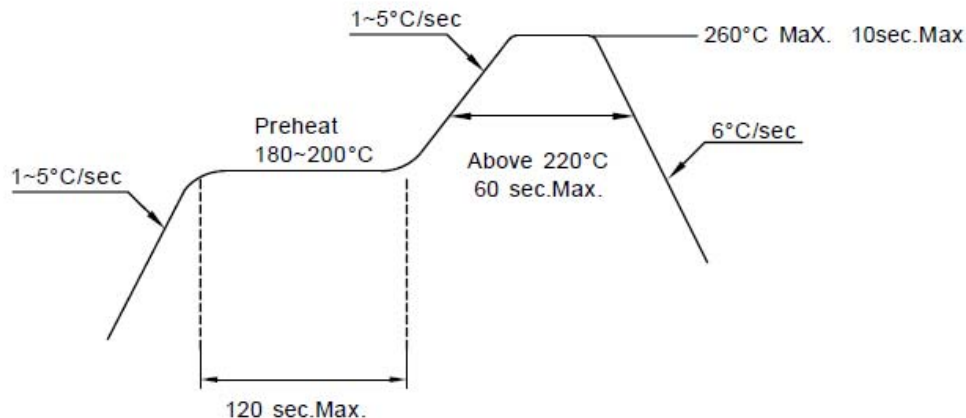
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RECOMMENDED SOLDERING CONDITION

1. Hand Solder
Basic spec is $\leq 320^{\circ}\text{C}$ for 3 seconds one time only
2. PB-Free Reflow Solder



Notes:

1. Reflow soldering should not be done more than 2 times
2. When soldering, do not put stress on the LEDs during heating
3. After soldering, do not warp the circuit board

PRECAUTION

Storage Time:

1. Calculated shelf life before opening is 12 months at $< 30^{\circ}\text{C}$ and $< 90\%$ relative humidity(RH)
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
 - a. Assembled within 168 hours in an environment of $\leq 30^{\circ}\text{C}/60\%$ RH or
 - b. Stored at ambient of 10% RH or less
3. Devices are required baking before assembly if:
 - a. Humidity indicator card reads $> 10\%$ (for level 2a-5a) or $> 60\%$ (for level 2) at ambient temperature $23 \pm 5^{\circ}\text{C}$
 - b. 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for > 72 hours at $60 \pm 5^{\circ}\text{C}/5\%$ RH. Performing baking only once and using baked devices within 72 hours
5. MSL Level 3



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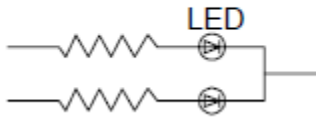
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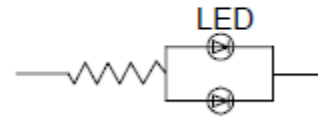
Drive method:

LED is a current operated device and therefore require some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor places in series with the LED. Consider worst case voltage variations than could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40% of its desired value

Circuit model A



Circuit model B



- Recommended circuit
- The difference of brightness between LED could be found due to the VF-IF characteristics of LED

Cleaning:

- Use alcohol based cleaning solvents such as isopropyl alcohol to clean the LED

Electrostatic Discharge(ESD)

- Static electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded