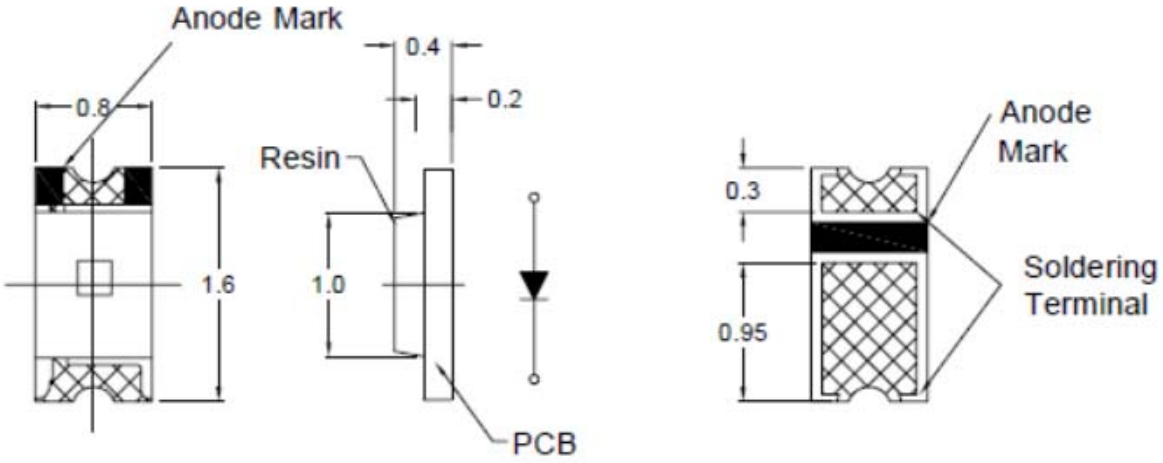
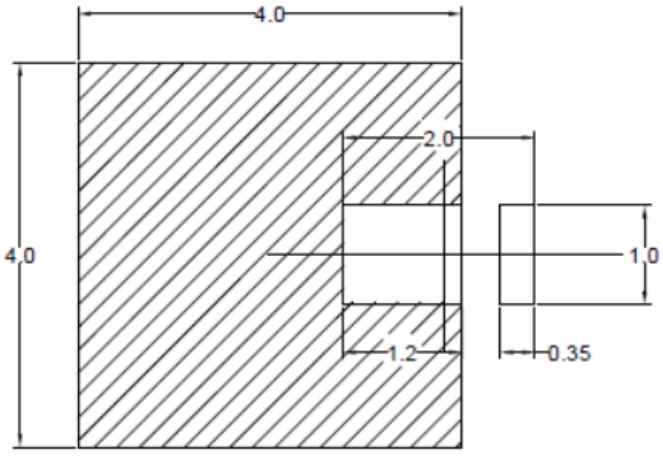
American Opto Plus LED Corp.
L196L-MYC-GAM
1.6 x 0.8 x 0.4 mm SMD Yellow SMD LED (Automotive)

PACKAGE DIMENSION



Notes
1. All dimensions are in millimeters; tolerance is ±0.2mm unless otherwise noted
2. Specifications are subject to change without notice

RECOMMENDED SOLDERING PAD



Cu-area ≥ 16mm² pad design
for improved heat dissipation

Notes: All dimensions are in millimeters; toelrance is ±0.1mm unless otherwise noted

Material	Color	
	Emitted	Lens Color
AlGaInP	Yellow	Water Clear

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

	Symbol	Rating	Unit
Forward Current	I_F	50	mA
Forward Peak Current (1/10 duty @10kHz)	I_{FP}	100	mA
Power Dissipation	P_D	140	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	150	K /W
LED Junction Temperature	Tj	125	°C

OPTICAL-ELECTRICAL CHARACTERISTICS (Ta=25°C)

	Symbol	Test Condition	Rating			Unit
			Min.	Typ.	Max.	
Luminous Intensity	Iv	I_F=50mA	450	800	1420	mcd
Forward Voltage	Vf		1.9	--	2.8	V
Dominant Wavelength	λD		583	590	595	nm
Spectral Line Half-Width	Δλ		--	15	--	nm
Viewing Angle	2Θ1/2		--	130	--	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.

LUMINOUS INTENSITY CLASSIFCATION

Bin Code	Iv(mcd) at 50mA	
	Min.	Max.
U1	450	560
U2	560	710
V1	710	900
V2	900	1120
X1	1120	1420

DOMINANT WAVELENGTH CLASSFICATION

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

FORWARD VOLTAGE CLASSFICATION

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

TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

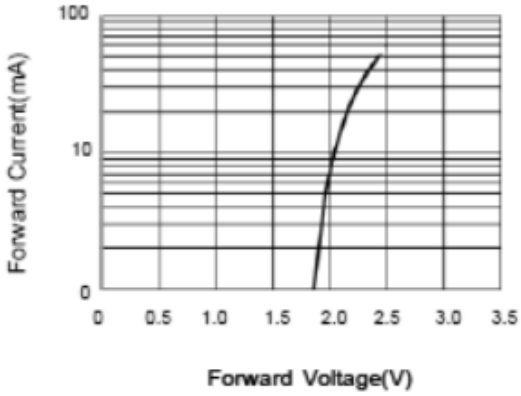


Fig.2 Luminous Intensity vs. Forward Current

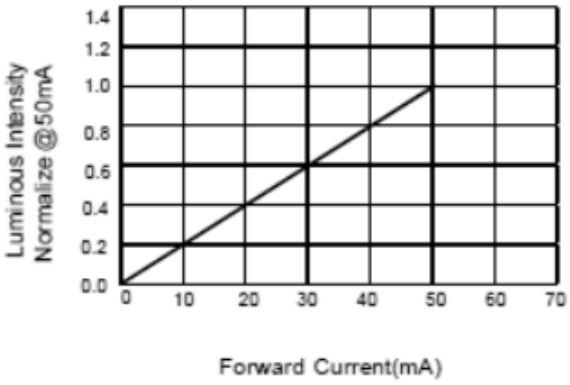


Fig.3 Forward Current vs. Temperature

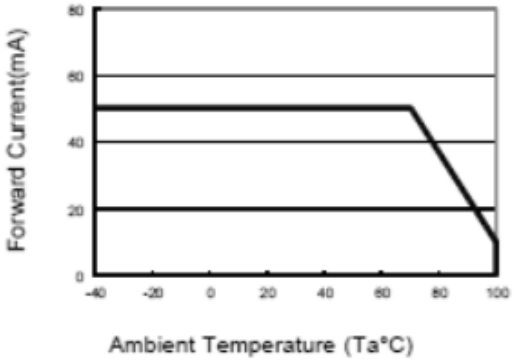


Fig.4 Luminous Intensity vs. Temperature

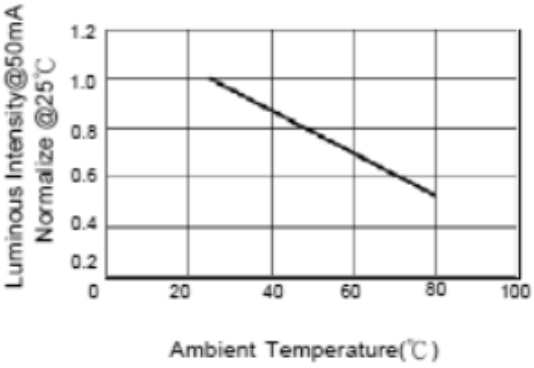


Fig.5 Relative Intensity vs. Wavelength

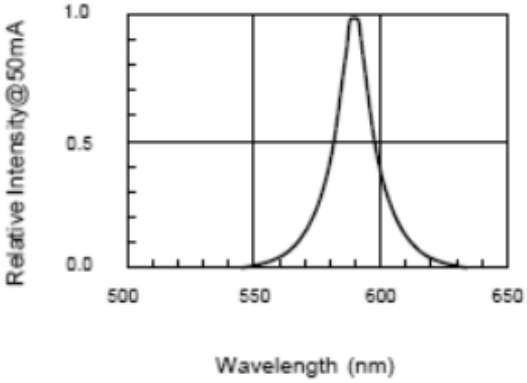
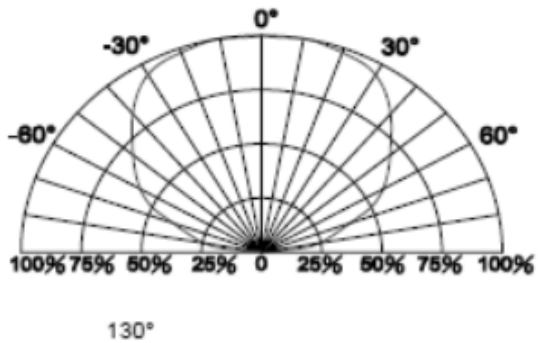
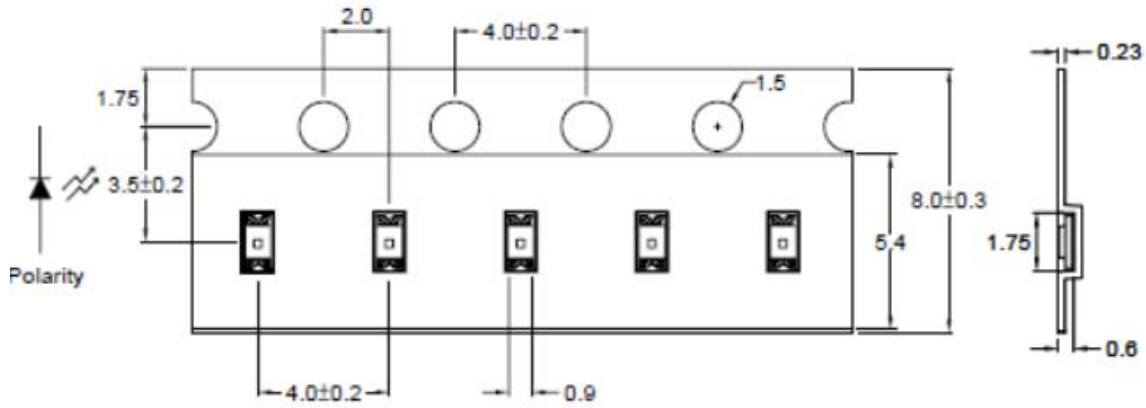


Fig.6 Directive Radiation

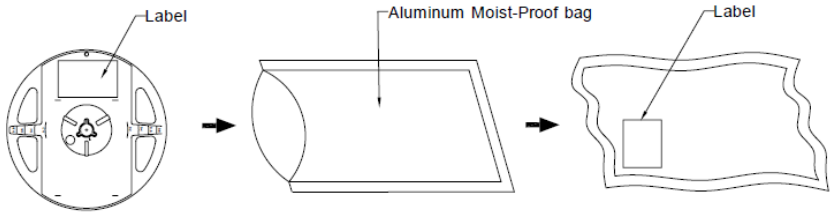


CARRIER TAPE DIMENSION



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

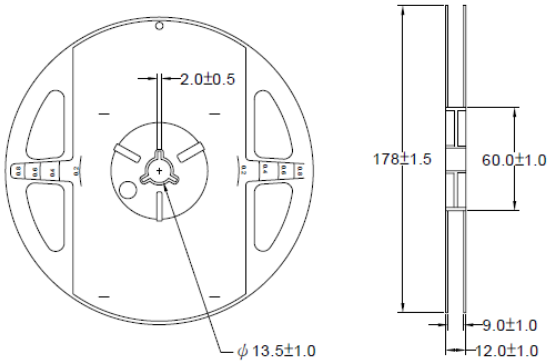
PACKING SPECIFICATIONS



Notes:

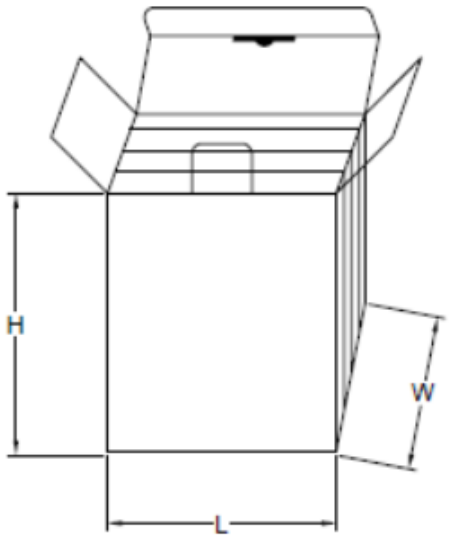
1. 8 mm tape
2. 7 inch reel

REEL DIMENSIONS



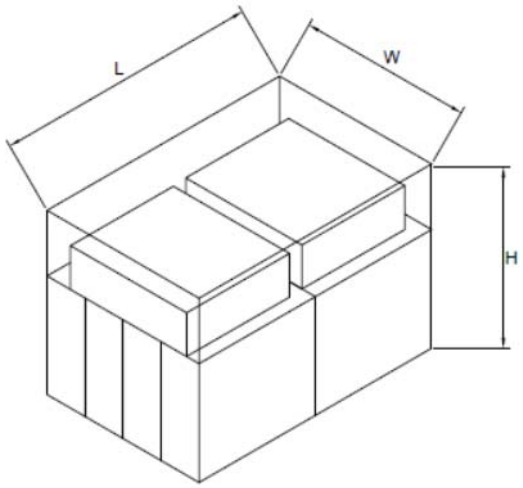
Notes: 4,000pcs / Reel

BOX EXPLANATION



NOTES:

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



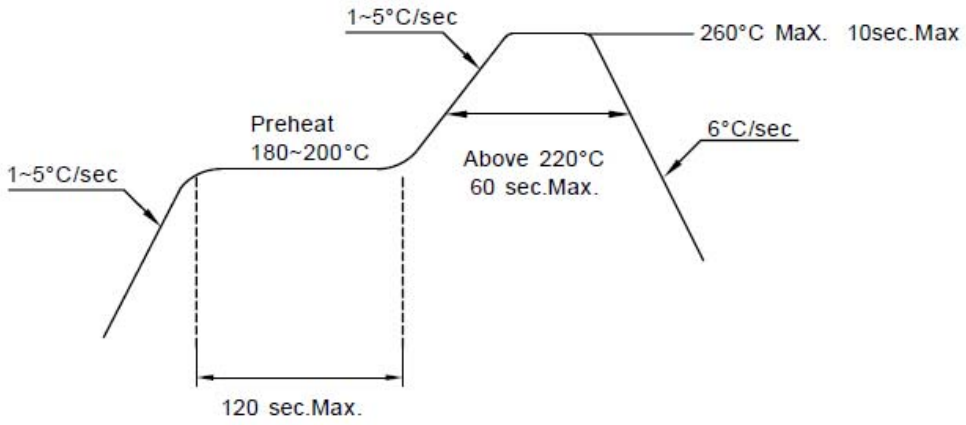
NOTES:

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

RECOMMENDED SOLDERING CONDITION

1. Hand Solder
   Basic spec is ≤320°C for 3 seconds one time only

2. PB-Free Reflow Solder



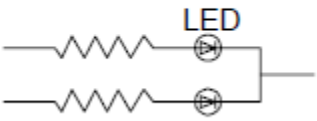
Notes:
1. Reflow soldering should not be done more than 2 times
2. When soldering, do not put stress on the LEDs during heating
3. After soldering, do not warp the circuit board

PRECAUTION

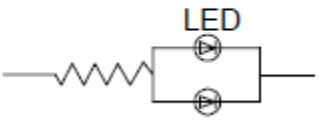
Storage Time:
1. Calculated shelf life before opening is 12 months at <30°C and < 90% relative humidity(RH)
2. After bag is opened, devices which wil be subjected to reflow soldering or other high temperature processes must be
   a. Assemebled within 168 hours in an enviornment of ≤30°C/60% RH or
   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±5°C
   b. 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >72 hours at 60±5°C/5% RH. Performing baking only once and using baked devices within 72 hours
5. MSL Level 2

Drive method:
LED is a current operated device and therefore require some kind of current limitng 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 csae 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



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

Cleaning:
1. Use alcohol based cleaning solvents such as isoproyl alcohol to clean the LED

Electrostatic Discharge(ESD)
1. 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