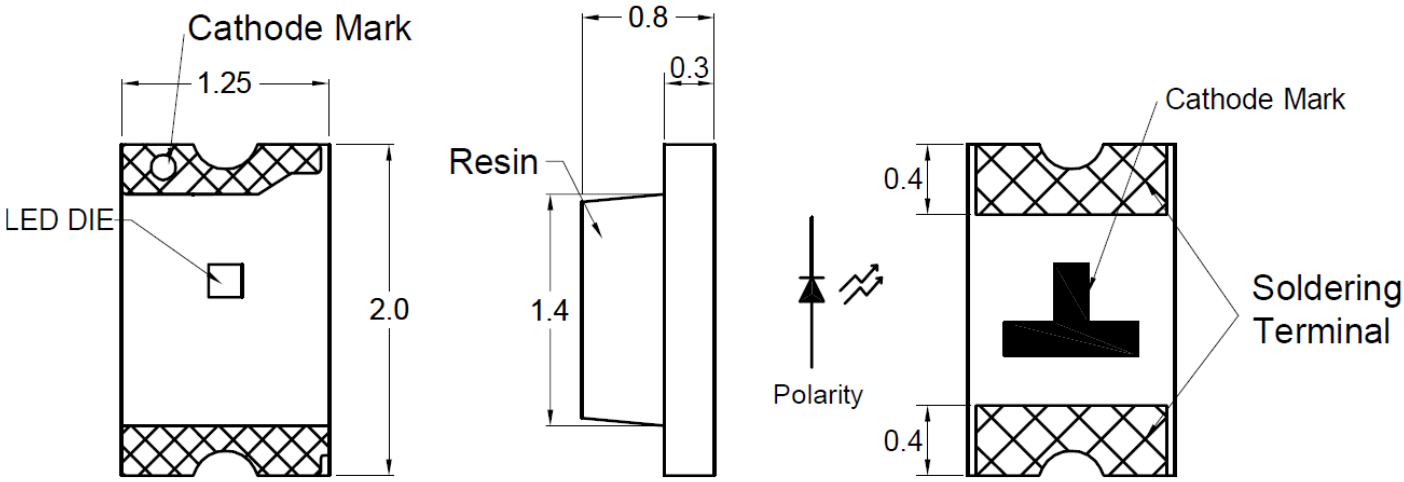
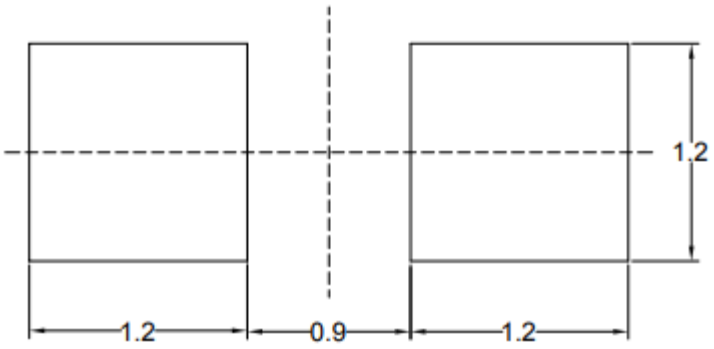
American Opto Plus LED Corp.
L171L-QYC-TR
2.0 x 1.25 x 0.8 mm Yellow SMD LED

PACKAGE DIMENSION



Notes:
1. All dimensions are in millimeters (inches); Tolerance is ±0.1mm unless otherwise noted.
2. Specifications are subject to change without notice.

RECOMMENDED SOLDERING PAD DIMENSIONS



Note: The tolerance unless mentioned is ±0.1mm, angle ±0.5. Unit=mm.

Chip Material	Chip Emitted	Lens Color	Viewing Angle
AlGaInP	Yellow	Water Clear	140

ABSOLUTE MAXIMUM RATINGS **(Ta=25°C)**

Parameter	Symbol	Value	Unit
Forward current	If	25	mA
Reverse current @ 5V	Ir	10	μA
Power dissipation	Pd	65	mW
Operating temperature range	Top	-40~+85	°C
Storage temperature range	Tstg	-40~+100	°C
Peak pulsing current (1/10 duty f= 10KHz)	Ifp	60	mA
Electrostatic Discharge	ESD	2000	V

OPTICAL-ELECTRICAL CHARACTERISTICS **(Ta=25°C)**

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Spectral half bandwidth	△λ	I_F = 20mA	--	15	--	nm
Dominant wavelength	λd	I_F = 20mA	--	595	--	Nm
Forward Voltage	Vf	I_F = 20mA	1.7	--	2.6	V
Luminous intensity	Iv	I_F = 20mA	80	125	--	mcd
Viewing angle at 50% Iv	2Θ ½	I_F = 20mA	--	140	--	Deg

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

LUMINOUS INTENSITY CLASSIFICATION **(IF=20mA)**

Bin Code	Min	Max	Unit
Q	80	125	mcd
R	125	200	
S	200	320	
T	320	500	

DOMINANT WAVELENGTH CLASSIFICATION **(IF=20mA)**

Bin Code	Min	Max	Unit
17	589	592	nm
18	592	595	
19	595	598	
20	598	600	

OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

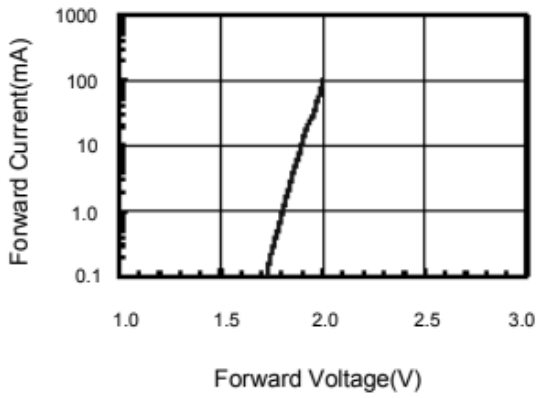


Fig.2 Relative Intensity vs. Forward Current

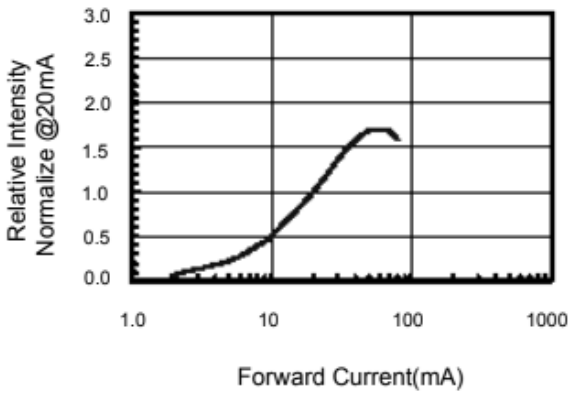


Fig.3 Forward Voltage vs. Temperature

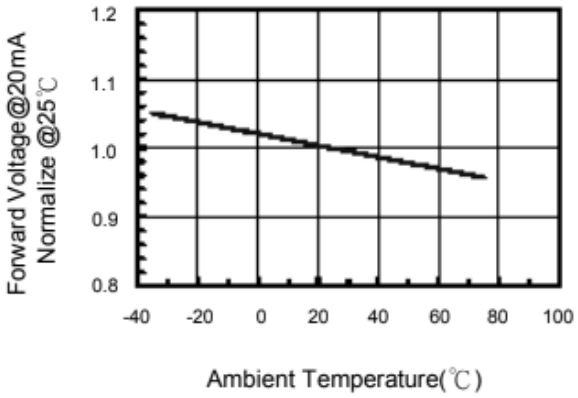


Fig.4 Relative Intensity vs. Temperature

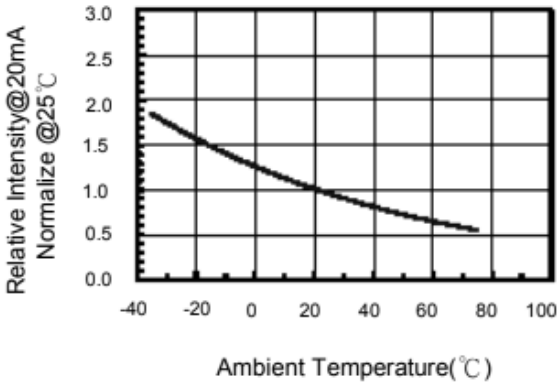


Fig.5 Relative Intensity vs. Wavelength

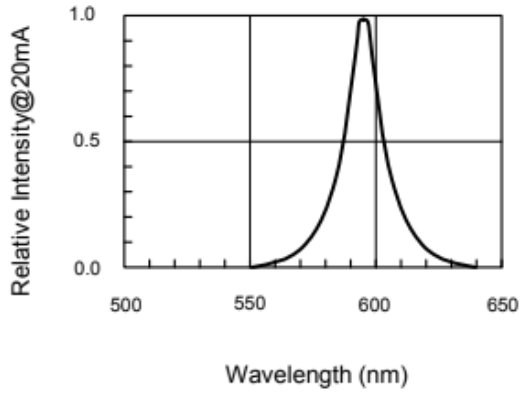
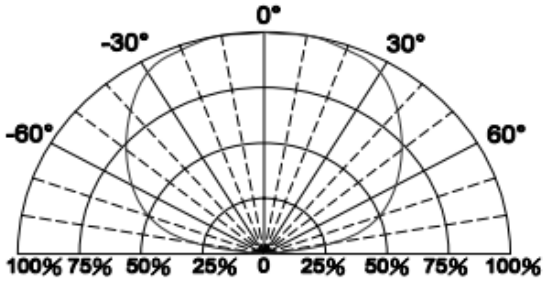
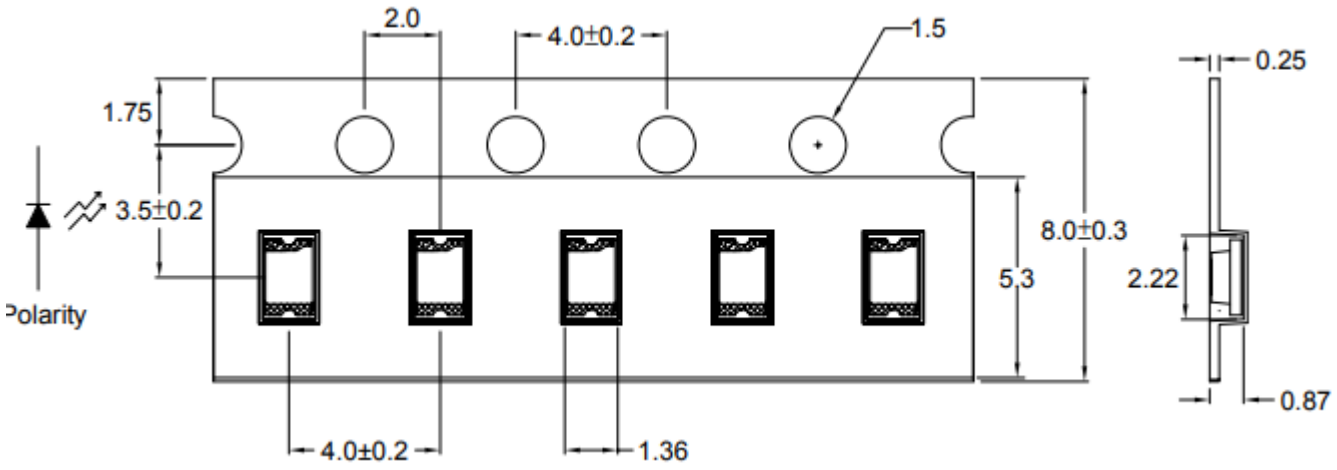


Fig.6 Directive Radiation

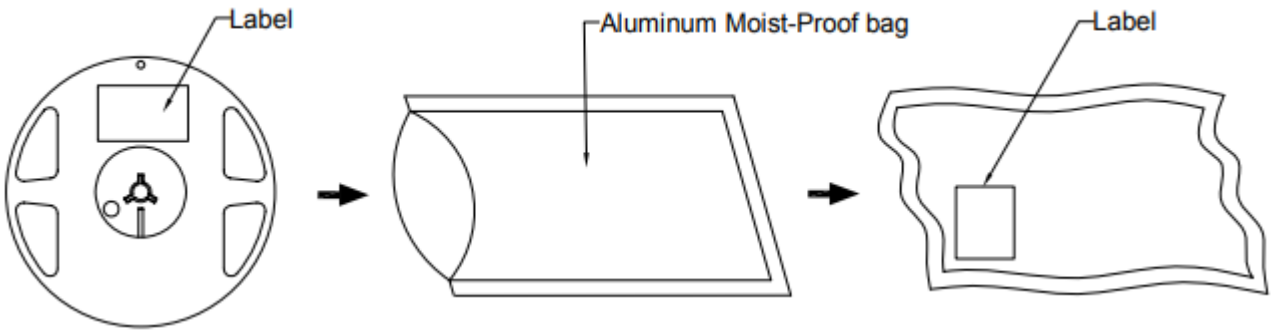


Dimensions of Tape (Unit: mm)



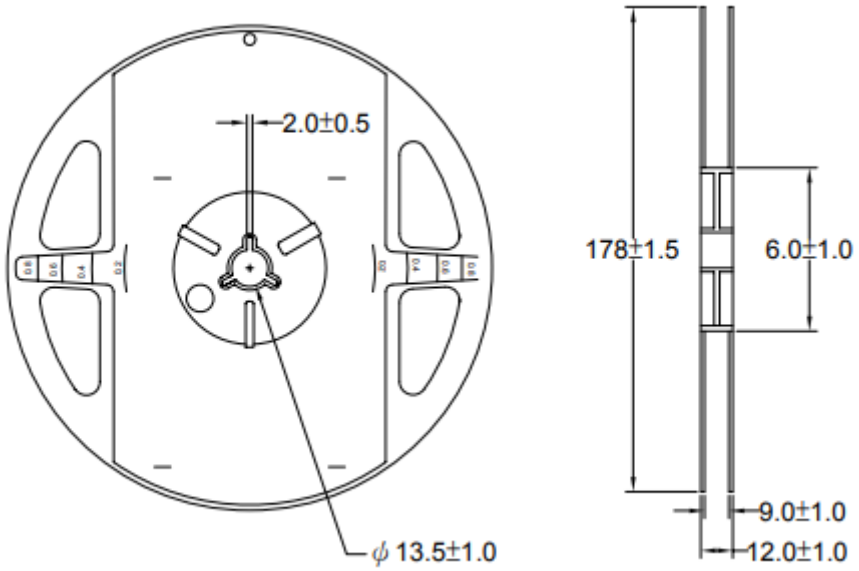
Note: The tolerances unless mentioned is ±0.1mm, Angle ± 0.5. Unit=mm.

PACKAGING SPECIFICATION



Description	Quantity/Reel
8.0mm tape, 7” reel	4000 pcs

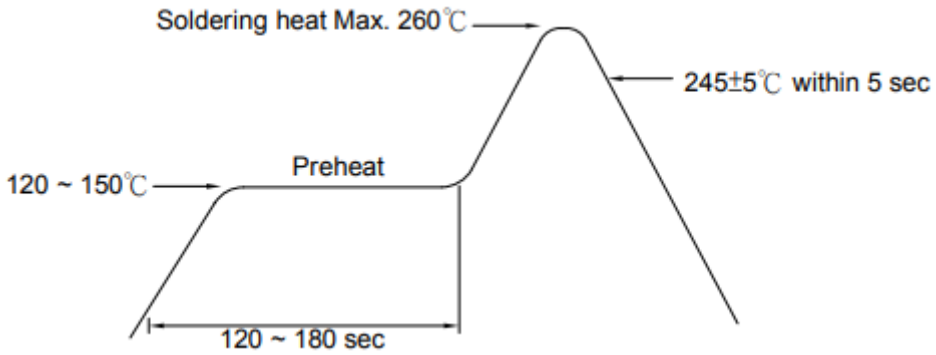
REEL DIMENSIONS



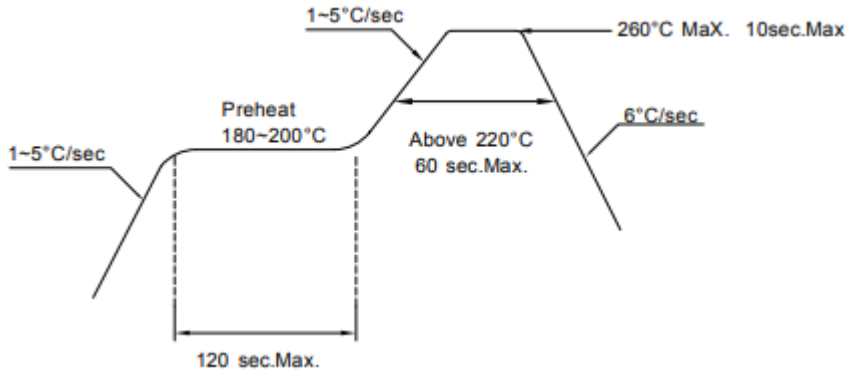
RECOMMENDED SOLDERING CONDITIONS

1. **Hand Solder**
   Basic spec is ≤280°C 3 sec one time only.

2. **Wave Solder**



3. **PB-Free reflow Solder**



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

PRECAUTIONS FOR USE:

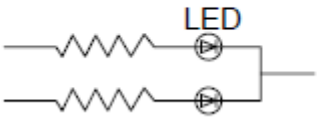
Storage time:

1. The operation of Temperature and RH are: 5°C-35°C, RH 60%.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with descanting agent. Considering the tape life, we suggest our customer to use our product within a year (from production date).
3. If opened more than one week in an atmosphere 5°C-35°C, RH60%, they should be treated at 60°C±5°C for 15 hours.

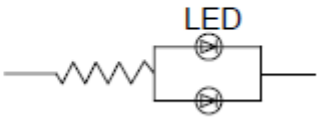
Drive method:

LED is 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 placed 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



(A) Recommended circuit.
(B) 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.

ESD (Electrostatic Discharge):

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.

RELIABILITY TEST

Classification	Test Item	Test Condition	Reference Standard
Endurance Test	Operating Life Test	1.Ta=Under Room Temperature As Per Data Sheet Maximum Rating. 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	MIL-STD-750D: 1026 MIL-STD-883D: 1005 JIS C 7021: B-1
	High Temperature Storage Test	1.Ta=105℃±5℃ 2.t=1000 hrs (-24hrs, +72hrs)	MIL-STD-883D:1008 JIS C 7021: B-10
	Low Temperature Storage Test	1.Ta=-40℃±5℃ 2.t=1000 hrs (-24hrs, +72hrs)	JIS C 7021: B-12
	High Temperature High Humidity Storage Test	1.Ta=65℃±5℃ 2.RH=90%~95% 3.t=1000hrs¡Ó2hrs	MIL-STD-202F:103B JIS C 7021: B-11
Environmental Test	Thermal Shock Test	1.Ta=105℃±5℃&-40℃±5℃ (10min) (10min) 2.total 10 cycles	MIL-STD-202F: 107D MIL-STD-750D: 1051 MIL-STD-883D: 1011
	Solderability Test	1.T.Sol=235℃±5℃ 2.Immersion time 2±0.5sec 3.Coverage ≧95% of the dipped surface	MIL-STD-202F: 208D MIL-STD-750D: 2026 MIL-STD-883D: 2003 IEC 68 Part 2-20 JIS C 7021: A-2
	Temperature Cycling	1.105℃ ~ 25℃ ~ -55℃ ~ 25℃ 30mins 5mins 30mins 5mins 2.10 Cyeles	MIL-STD-202F: 107D MIL-STD-750D: 1051 MIL-STD-883D: 1010 JIS C 7021: A-4
	IR Reflow	1.T=260°C Max. 10sec.Max. 2. 6 Min	MIL-STD-750D:2031.2 J-STD-020