

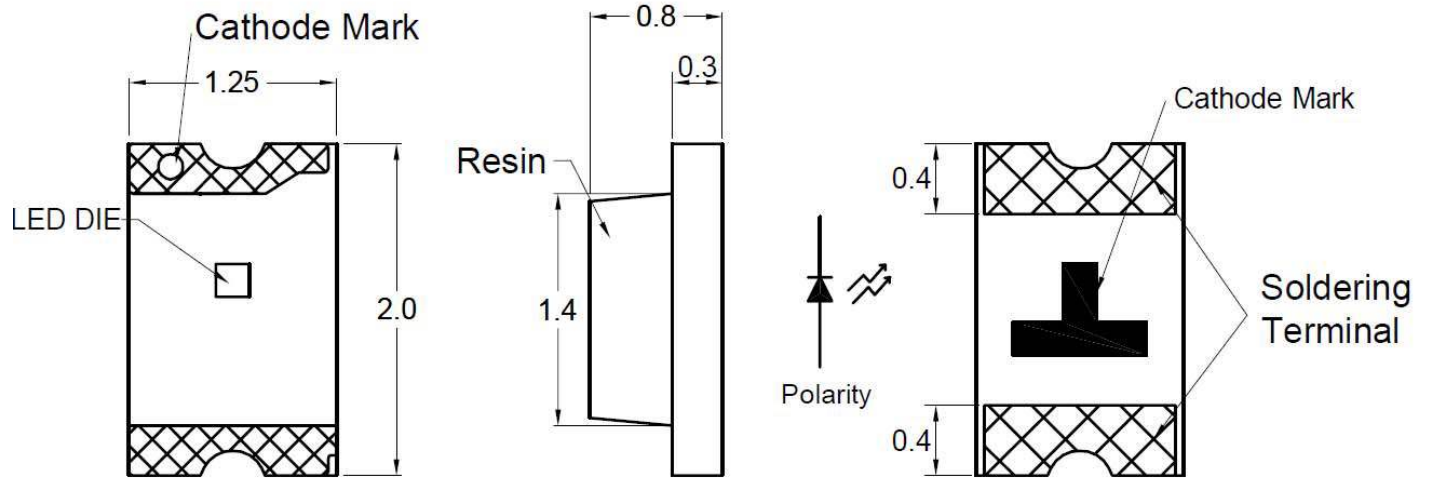


# American Opto Plus LED Corp.

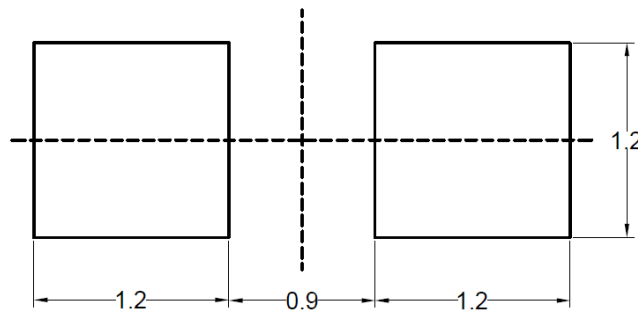
## L171L-LPGC-TR

2.0 x 1.25 x 0.8 mm Pure Green SMD LED

### PACKAGE DIMENSION



### Recommended Solder Pad



#### NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1$ mm unless otherwise noted.

Chip Material	Chip Emitted	Lens Color	Viewing Angle
InGaN/GaN	Pure Green	Water Clear	130



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### ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Value	Unit
Forward current	I <sub>f</sub>	20	mA
Reverse current @ 5V	I <sub>r</sub>	10	μA
Power dissipation	P <sub>d</sub>	80	mW
Operating temperature range	T <sub>op</sub>	-20~+80	°C
Storage temperature range	T <sub>stg</sub>	-30~+100	°C
Electrostatic Discharge	ESD	2000	V
Peak pulsing current (1/10 duty f= 10KHz)	I <sub>fp</sub>	100	mA

### OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	λ <sub>peak</sub>	I <sub>F</sub> = 20mA	-	518	-	nm
Spectral half bandwidth	Δλ	I <sub>F</sub> = 20mA	-	36	-	nm
Dominant wavelength	λ <sub>dom</sub>	I <sub>F</sub> = 20mA	-	525	-	Nm
Forward Voltage	V <sub>f</sub>	I <sub>F</sub> = 20mA	2.8	--	3.6	V
Luminous intensity	I <sub>v</sub>	I <sub>F</sub> = 20mA	125	250	-	mcd
Viewing angle at 50% I <sub>v</sub>	2θ ½	I <sub>F</sub> = 20mA		130	-	Deg

\*Note: 1. The forward voltage data did not include ±0.1V testing tolerance.  
2. The luminous intensity data did not include ±15% testing tolerance.



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### OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

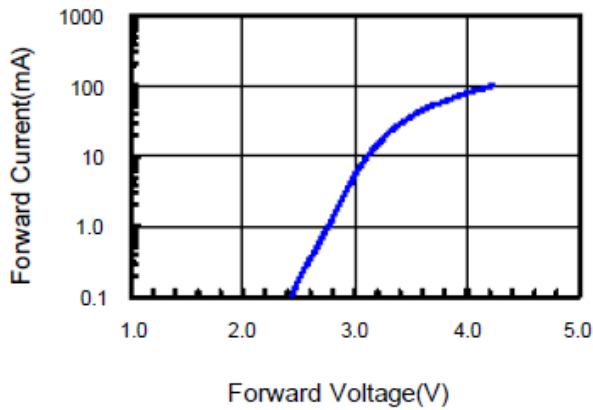


Fig.2 Relative Intensity vs. Forward Current

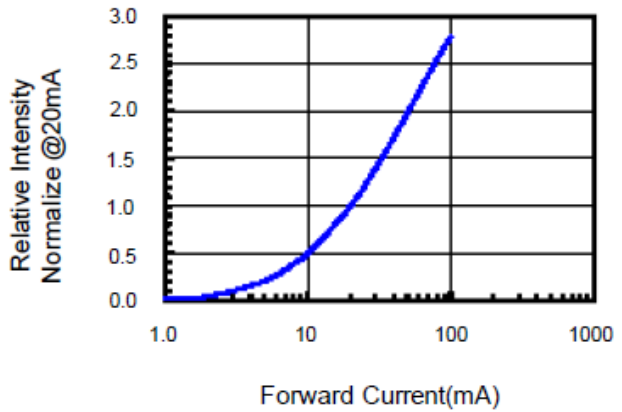


Fig.3 Forward Voltage vs. Temperature

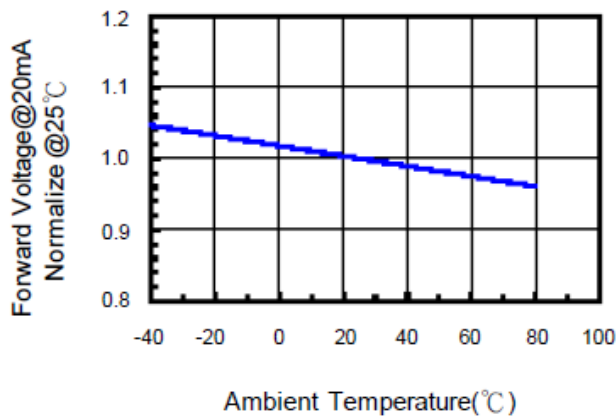


Fig.4 Relative Intensity vs. Temperature

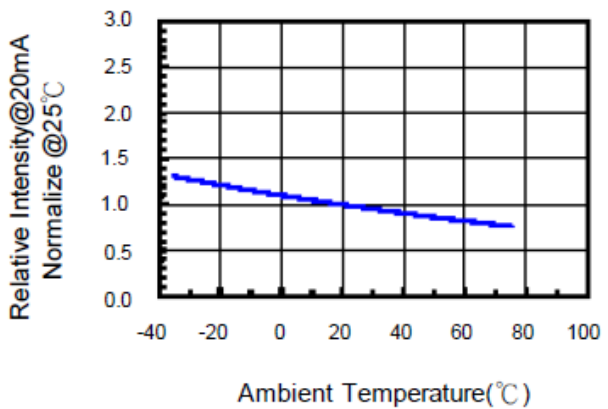


Fig.5 Relative Intensity vs. Wavelength

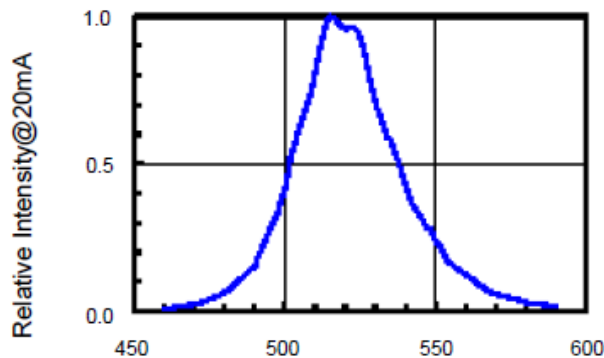
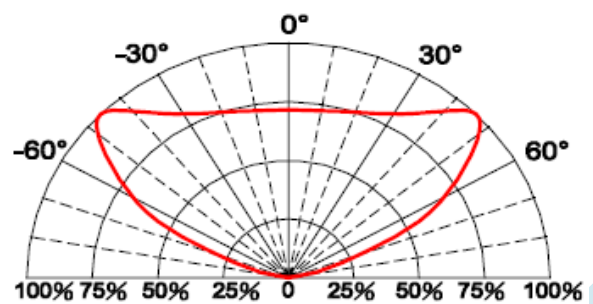


Fig.6 Directive Radiation





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### LUMINOUS INTENSITY BIN TABLE

Group	Iv(mcd) @ 20mA		Unit
	Min	Max	
R	125	200	nm
S	200	320	
T	320	500	
U	500	800	

### DOMINANT WAVELENGTH BIN TABLE

Group	(mcd) @ 20mA		Unit
	Min	Max	
1O	519	522	nm
1P	522	525	
1Q	525	528	
1R	528	531	



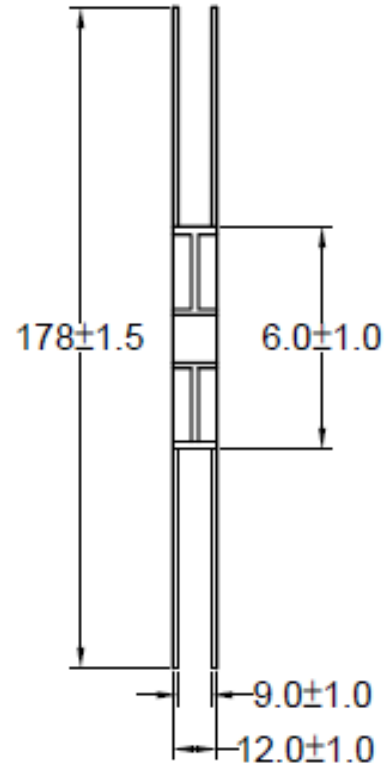
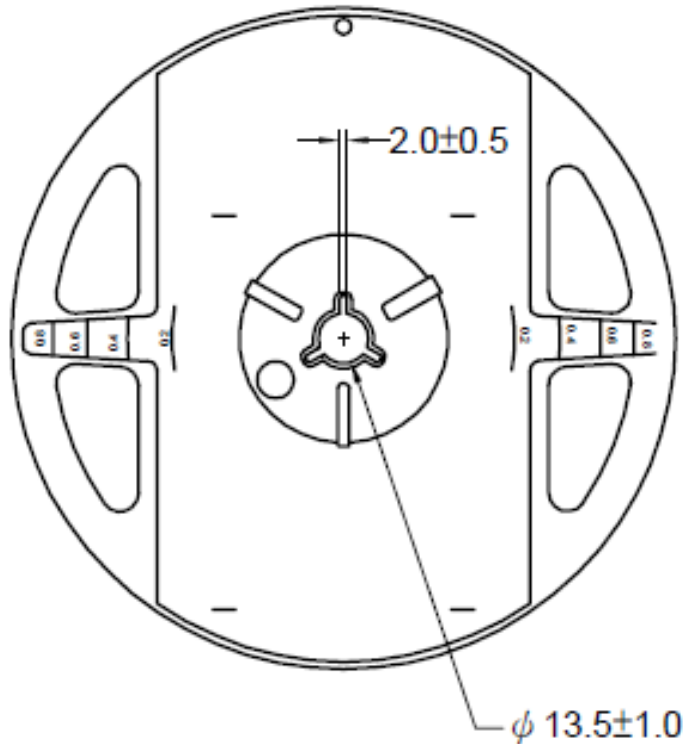


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**L171L-LPGC-TR**

**2.0 x 1.25 x 0.8 mm Pure Green SMD LED**

## REEL DIMENSIONS



### Notes:

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole.
4. 4,000pcs/Reel



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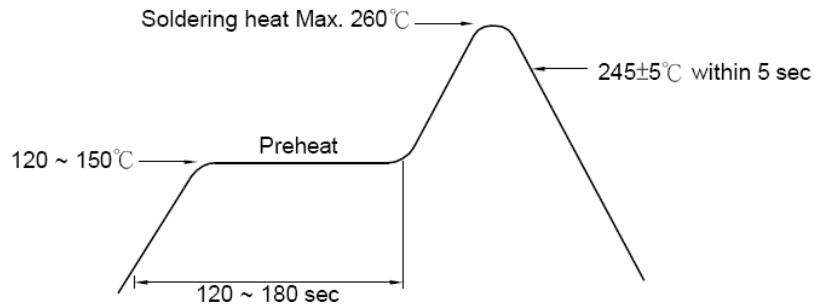
2.0 x 1.25 x 0.8 mm Pure Green SMD LED

### Recommended Soldering Conditions

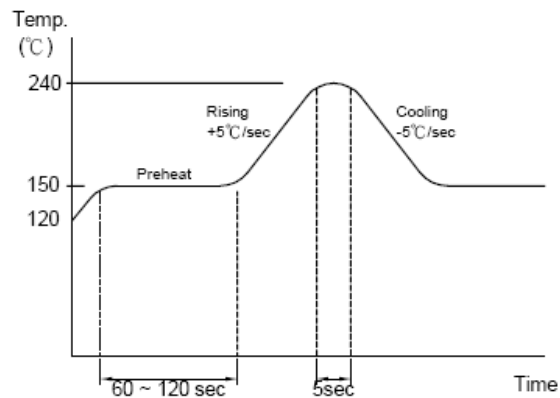
#### 1. Hand Solder

Basic spec is  $\leq 280^{\circ}\text{C}$  3 sec one time only.

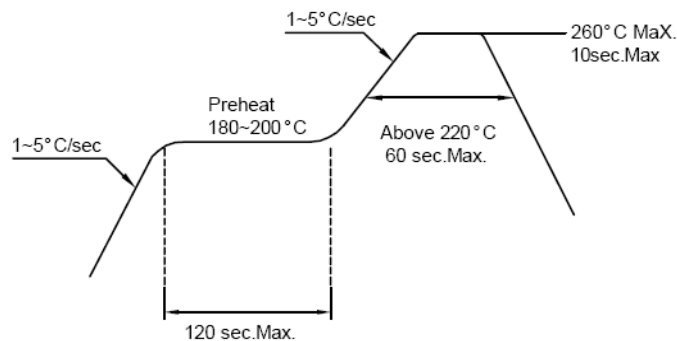
#### 2. Wave Solder



#### 3-1. LEAD Reflow Solder



#### 3-2. PB-Free Reflow Solder



Note: Reflow soldering should not be done more than two times.



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### PRECAUTIONS FOR USE

Storage Time:

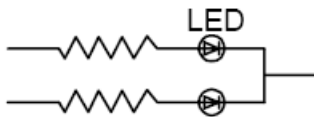
1. The operation of temperatures and RH are: 5°C~35°C, RH60%.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with desiccating agent. Considering the tape life, we suggest our customers to use our products within a year (from 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 15hrs.

Drive Method:

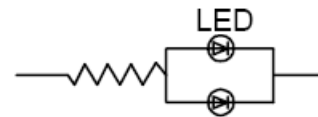
LED is a current operated device, and therefore, require some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in a series with the LED.

Consider worst case voltage variations that 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 LEDs. All devices and machinery must be properly grounded.





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### 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°C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	MIL-STD-883D:1008 JIS C 7021: B-10
	Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	JIS C 7021: B-12
	High Temperature High Humidity Storage Test	1.Ta=65°C±5°C 2.RH=90%~95% 3.t=1000hrs±2hrs	MIL-STD-202F:103B JIS C 7021: B-11
Environmental Test	Thermal Shock Test	1.Ta=105°C±5°C & -40°C±5°C (10min) (10min) 2.total 10 cycles	MIL-STD-202F: 107D MIL-STD-750D: 1051 MIL-STD-883D: 1011
	Solderability Test	1.T.Sol=235°C±5°C 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°C ~ 25°C ~ -55°C ~ 25°C 30mins 5mins 30mins 5mins 2.10 Cycles	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