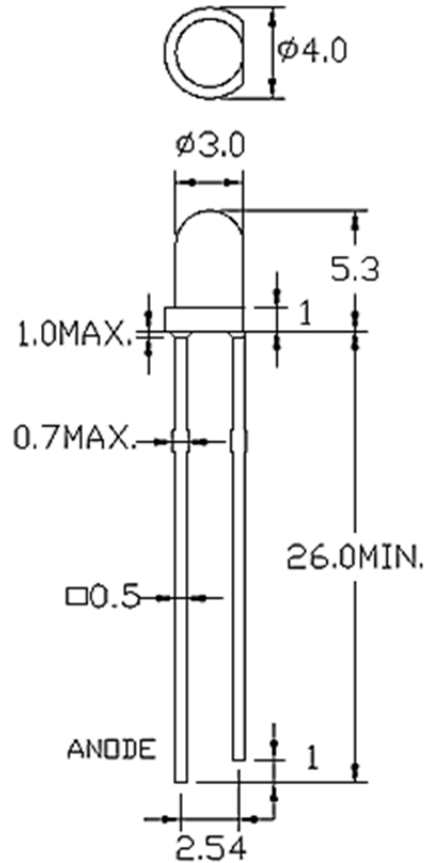




**American Opto Plus LED Corp.**  
**L314QED-60D**  
**3mm Round LED Lamp**

**PACKAGE OUTLINES**



ITEM	MATERIALS
Dice	AllnGaP
Lens Color	Red Diffused
Emitted Color	Red

**Notes:**

1. All dimensions are in millimeters (inches)
2. Tolerances are  $\pm 0.25\text{mm}$  (0.01 inches) unless otherwise noted.



# American Opto Plus LED Corp.

## L314QED-60D

### 3mm Round LED Lamp

#### ABSOLUTE MAXIMUM RATINGS

(Ta = 25°C)

Parameter	Symbol	Value	Unit
Recommended Forward Current	I <sub>F</sub>	20	mA
Peak Forward Current (Duty 1/10@1KHz)	I <sub>FP</sub>	100	mA
Power Dissipation	P <sub>D</sub>	85	mW
Reverse Current (V <sub>R</sub> =5V)	I <sub>R</sub>	10	μA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	T <sub>OPR</sub>	-40~+85	°C
Storage Temperature Range	T <sub>STG</sub>	-40~+100	°C
Lead Soldering Temperature Range	T <sub>SOL</sub>	260°C for 5 seconds	

#### OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta = 25°C)

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =20mA	80	120	200	mcd
Viewing Angle	2θ <sub>1/2</sub>		--	60	--	deg
Peak Emission Wavelength	λ <sub>P</sub>		--	653	--	nm
Dominant Wavelength	λ <sub>D</sub>		--	635	--	nm
Spectral Line Half-Width	Δλ		--	19	--	nm
Forward Voltage	V <sub>F</sub>		1.7	1.9	2.4	V

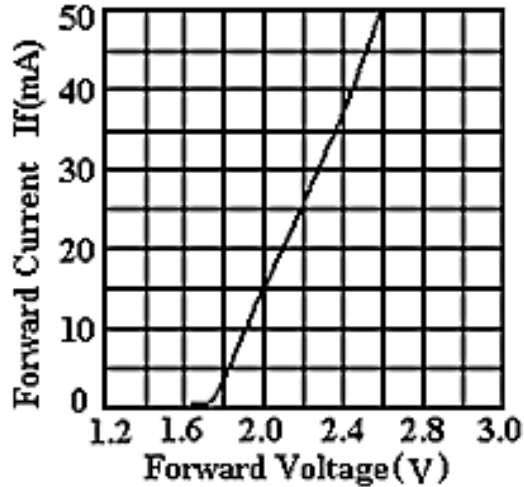


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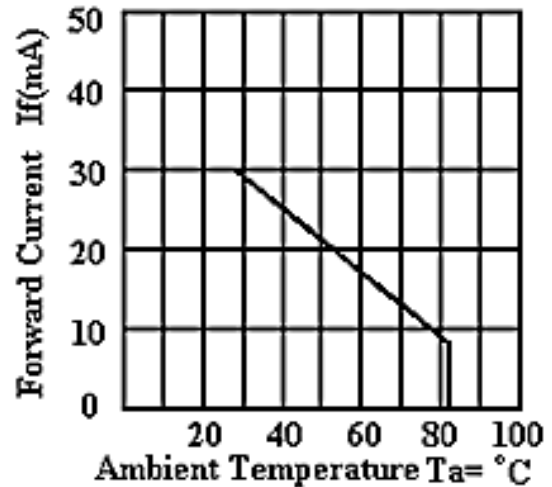
## L314QED-60D

3mm Round LED Lamp

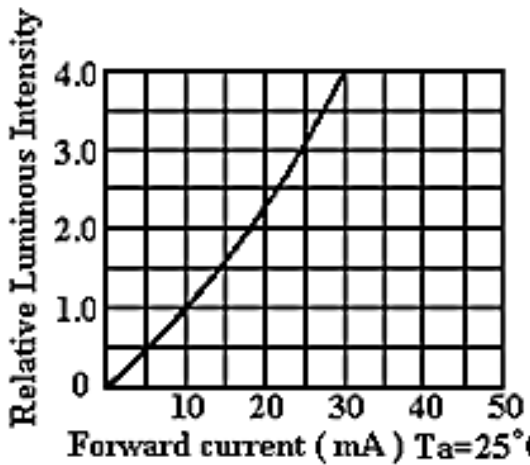
### OPTICAL CHARACTERISTIC CURVES



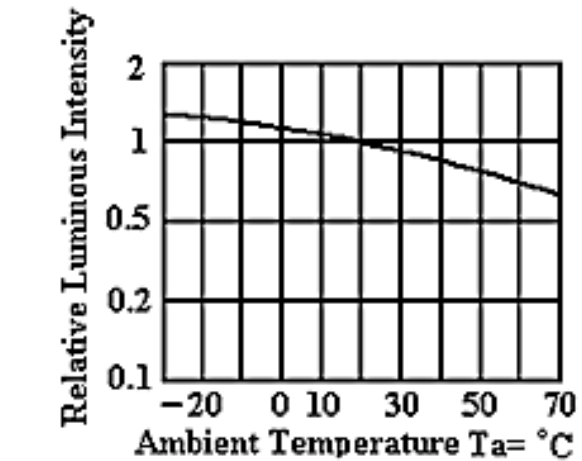
Forward current vs. Forward Voltage



Forward current Derating curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



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#### TEST ITEMS AND RELIABILITY RESULT

NO.	Item	Test Conditions	Test Time/ Cycle	Sample Size	Ac/Re
1	DC Operating Life	Temperature:25°C IF:20mA	1000HRS	20PCS	0/1
2	High Temperature High Humidity	Temperature:85°C 85%RH	1000HRS	20PCS	0/1
3	High Temperature Storage	Temperature:100°C	1000HRS	20PCS	0/1
4	Low Temperature Storage	Temperature:-40°C	1000HRS	20PCS	0/1
5	Temperature Cycling	85°C~25°C~-35°C 15min~5min~15min	15Cycles	20PCS	0/1
6	Thermal Shock	85°C~25°C~-10°C 5min~10sec~5min	15Cycles	20PCS	0/1
7	Solder Heat	Temperature:260°C±5°C	10SEC.	20PCS	0/1



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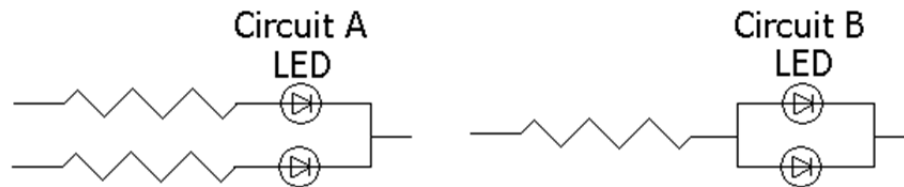
## L314QED-60D

### 3mm Round LED Lamp

## PRECAUTIONS

### 1. Drive Method:

LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs, connect in parallel for application. It is recommended that a current limiting resistor be incorporated in the drive circuit.



- Circuit A is the recommended circuit.
- Circuit B, the brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

### 2. Over-current proof:

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change and burn out will happen

### 3. Storage:

The Storage Temperature and RH are: 5°C ~ 30°C, RH 60% or less.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a moisture proof package with moisture absorbent material (i.e. silica gel).

We suggest our customers to use our products within a year.

If the moisture absorbent material (silica gel) has faded away or the LEDs exceeded the storage time, baking treatment should be performed using the following conditions.

Bake treat more than 24 hours at 60°C ±5°C.

### 4. Electrostatic Discharge (ESD)

Static electricity or surge voltage will damage the LEDs.

Suggestions to prevent ESD damage: Use a conductive wrist band or anti-electrostatic glove when handing these LEDs. All devices, equipment, and machinery must be properly grounded. Work tables, storage racks, etc. should be properly grounded. In the event of a manual working in process, make sure the devices are well protected from ESD at any time.

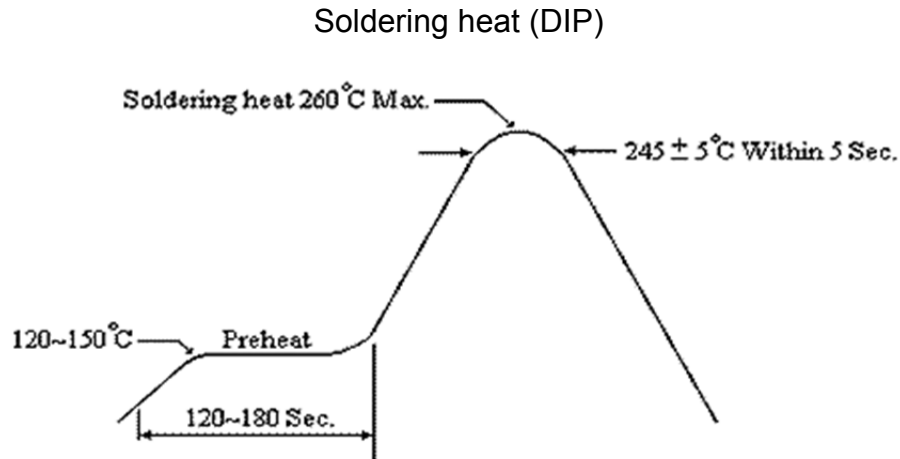


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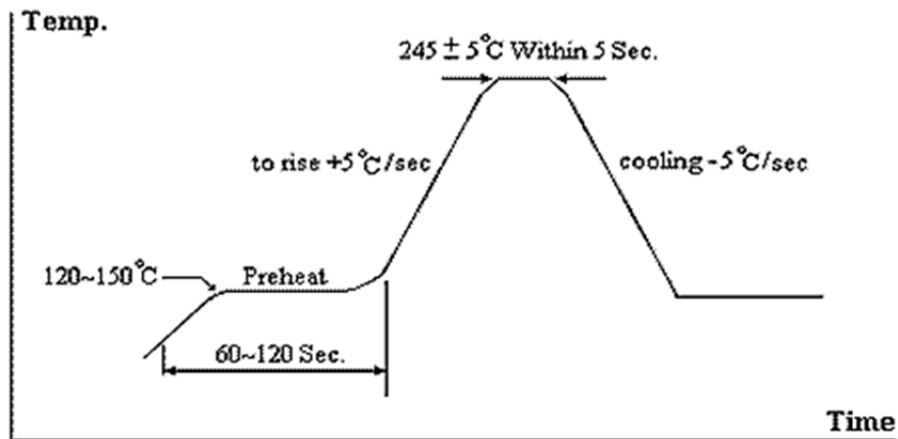
## L314QED-60D

### 3mm Round LED Lamp

#### RECOMMENDED SOLDERING CONDITION



#### REFLOW PROFILE



- Soldering Iron  
Temperature at tip of iron: 300°C Max (25 W Max)  
Soldering time: 3 sec ±1 sec (once only)  
If temperature is higher, time should be shorter