



American Opto Plus LED Corp.

L314SRD-12V76D

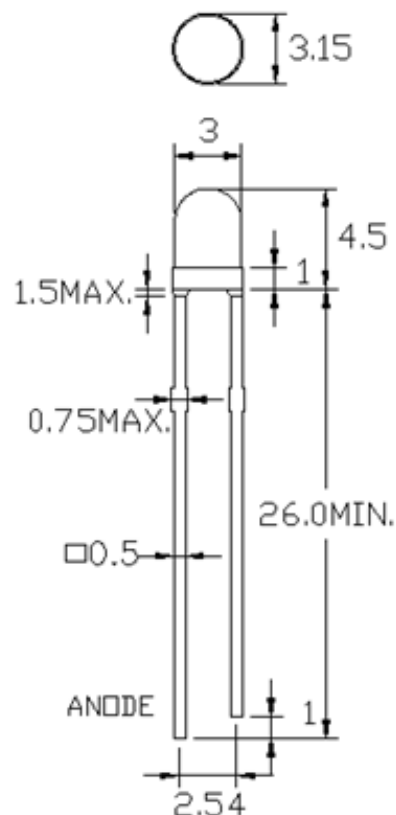
3.0mm Round With Chip Resistor Built in LED Lamp

DESCRIPTION

- Round Type
- 3.0mm Diameter
- Lens Color: Red Diffused

FEATURES

- Emitted Color: Super Red
- Technology: GaAIAs
- Viewing Angle: 76°



Unit:mm



Note: All dimensions are in millimeters tolerance is $\pm 0.25\text{mm}$ ($\pm 0.01\text{inch}$) unless otherwise noted.

Part Number	Material	Lens Color	
		Emitted	Lens
L314SRD-12V76D	GaAIAs	Super Red	Red Diffused



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Peak Forward Current (duty 1/10 @ 1KHz)	I _{FP}	100	mA
Recommended Operating Current	I _{F(REC)}	20	mA
Power Dissipation	P _D	85	mW
Reverse Voltage	V _R	5	V
Operating Temperature Range	T _{OPR}	-40~+85	°C
Storage Temperature Range	T _{STG}	-40~+100	°C
Lead Soldering Temperature Range 1.6mm (1/16 inch) from body	T _{SOL}	260°C for 5 seconds	

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Luminous Intensity	I _v	I _F =12mA	16	20	35	mcd
Peak Emission Wavelength	λ _P		--	660	--	nm
Dominant Wavelength	λ _D		--	643	--	nm
Forward Voltage	V _F		11	12	13	V
Spectral Line Half-Width	Δλ		--	20	--	nm
Viewing Angle	2θ _{1/2}		--	76	--	deg
Reverse Current	I _R	V _R =5V	--	--	10	μA

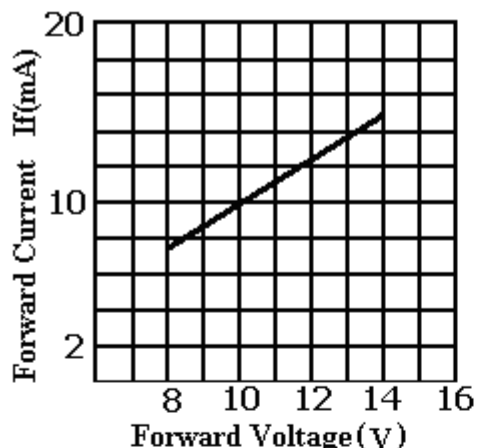


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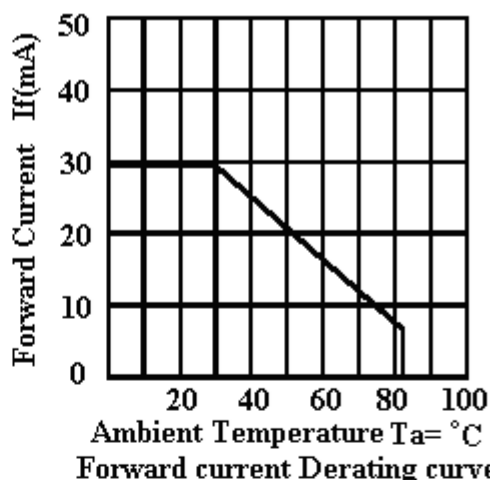
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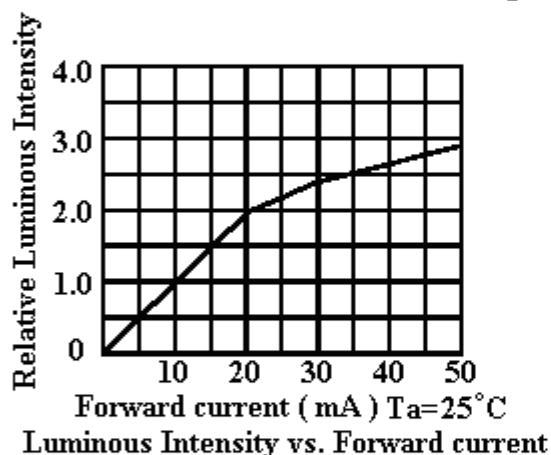
TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES



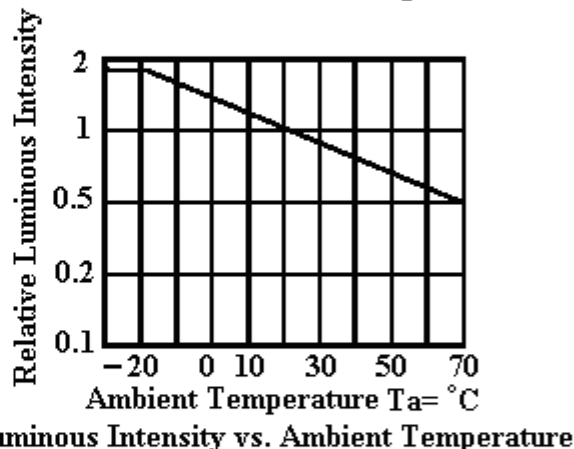
Forward current vs. Forward Voltage



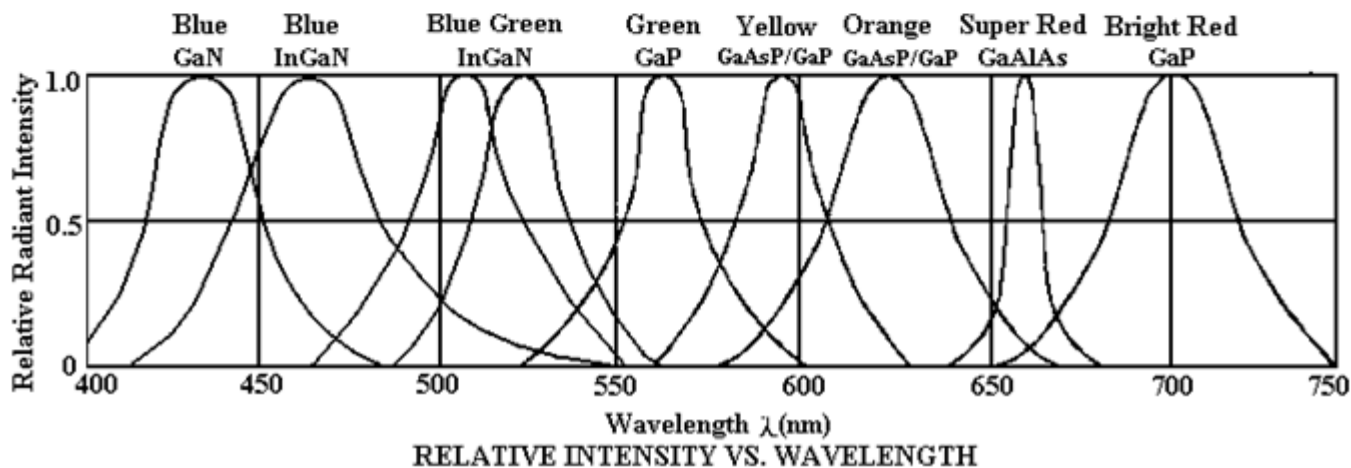
Forward current Derating curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



RELATIVE INTENSITY VS. WAVELENGTH



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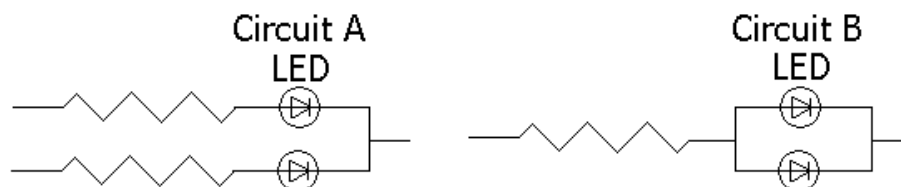
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PRECAUTIONS

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 \pm 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.

5. Other

For uniform luminance and color, please use the same binning number and avoid using intermix. This shall prevent differences of luminance and color.

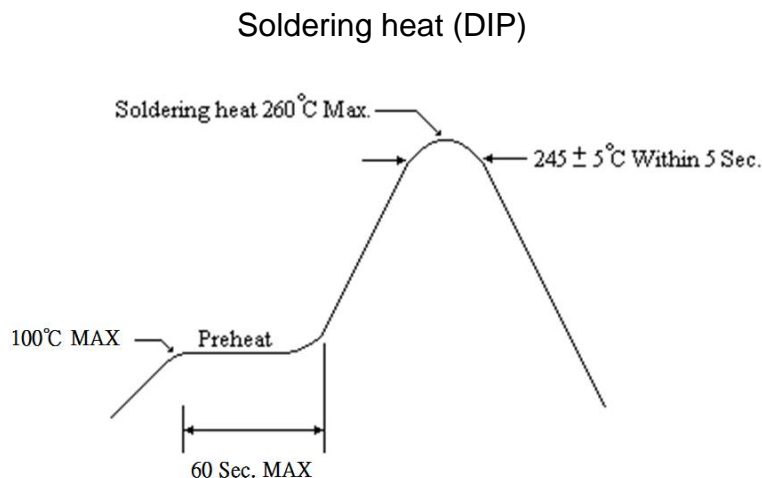


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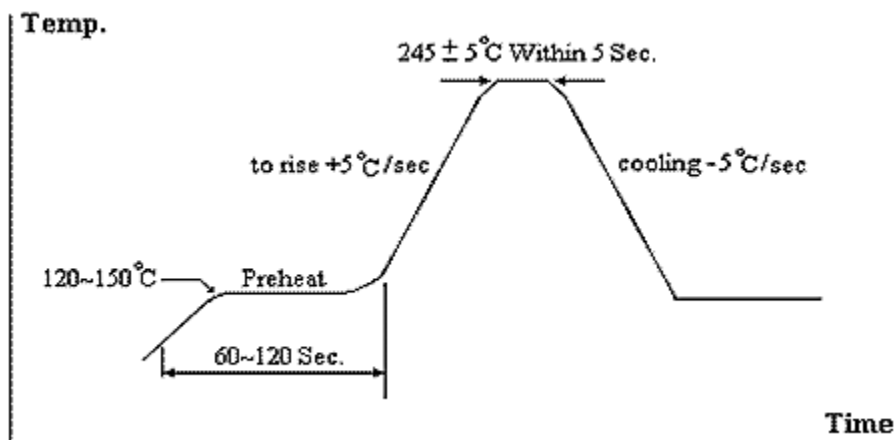
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RECOMMENDED SOLDERING CONDITION



REFLOW PROFILE



- Soldering Iron
Temperature at tip of iron: 350°C Max
Soldering time: 3 sec \pm 1 sec (once only)
If temperature is higher, time should be shorter



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RELIABILITY TEST

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