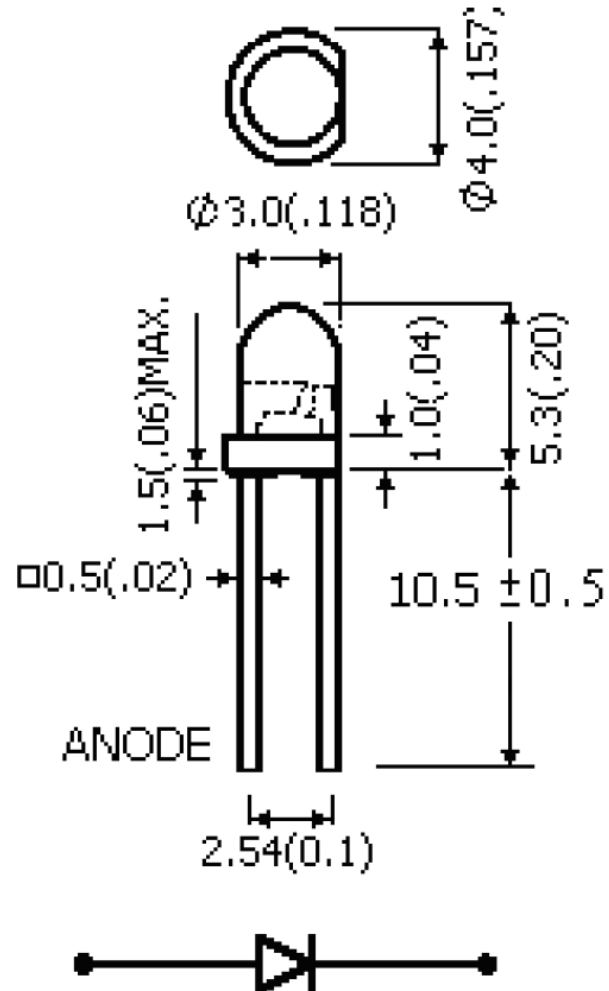# American Opto Plus LED Corp.
L314QRC-36D
3mm Red LED Lamp

DESCRIPTION

- Round Type
- 3mm Diameter
- Lens Color: Water Clear
- With Flange
- Solder leads without standoffs

FEATURES

- Emitted Color: Red
- High Luminous Intensity
- Technology: GaAlAs
- Viewing Angle: 36°

NOTES:
1. All dimensions are in millimeters.

Part Number	Material	Lens Color	
		Emitted	Lens
L314QRC-36D	GaAlAs	Red	Water Clear

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Continuous Forward Current	I_F	20	mA
Peak Pulsed Forward Current	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	Pd	85	mW
Operating temperature range	Topr	-40~+85	°C
Storage temperature range	Tstg	-40~+85	°C

Solder temperature range 1.6 mm from body for 5 sec at 260°C.

OPTICAL-ELECTRICAL CHARACTERISTICS (Ta=25°C)

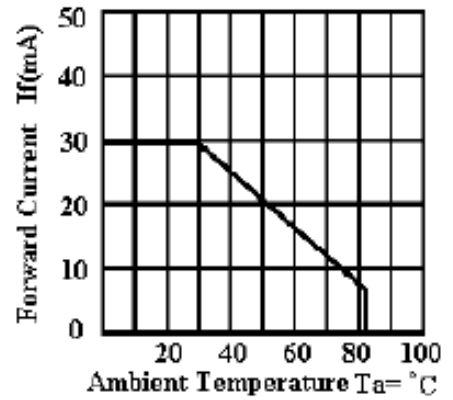| Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Current	I_R	V_R=5V	--	--	10	µA
Forward Voltage	V_F		1.7	1.85	2.0	V
Luminous Intensity	I_V		80	120	200	mcd
Dominant Wavelength	λd		--	643	--	nm
Peak Wavelength	λp	I_F=20mA	--	660	--	nm
Spectrum Radiation Bandwidth	Δλ		--	20	--	nm
Viewing Angle	2θ1/2		--	36	--	deg

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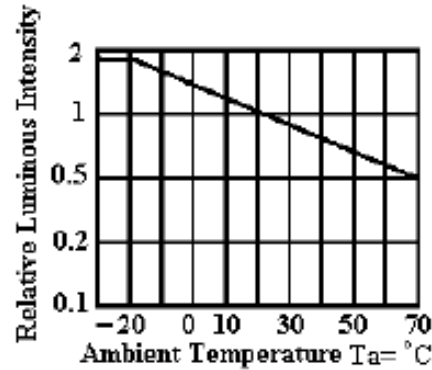## TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES
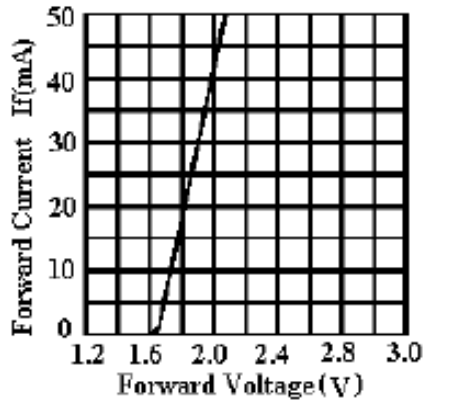
Forward current vs. Forward Voltage

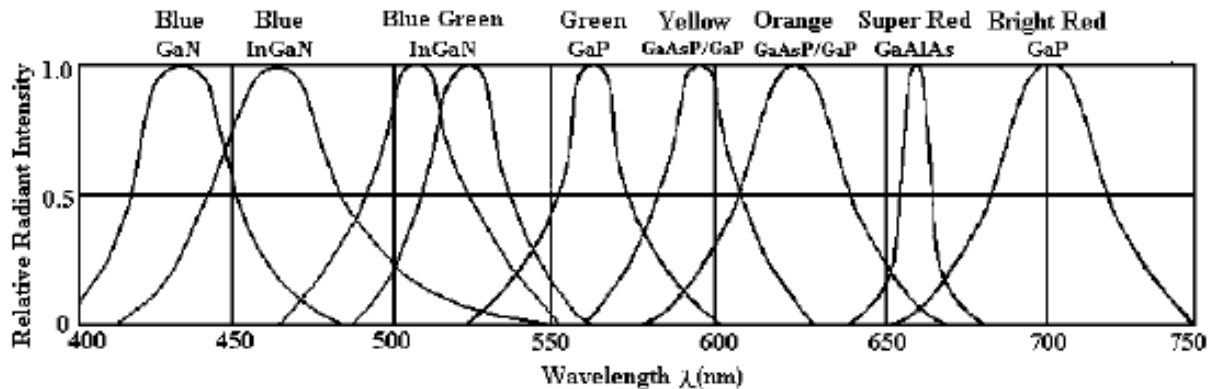Forward current Derating curve
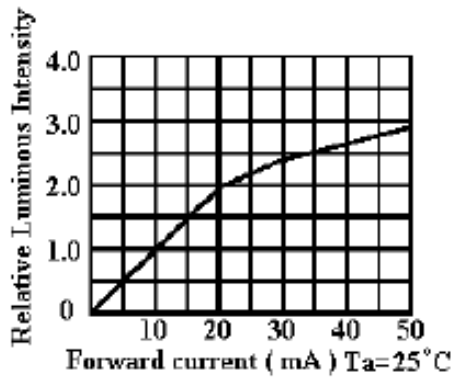
Luminous Intensity vs. Forward current

Luminous Intensity vs. Ambient Temperature

RELATIVE INTENSITY VS. WAVELENGTH

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Reliability Test Report:

| NO.	Item	Test Conditions	Test Time/ Cycle	Sample Size	Ac/Re
1	DC Operating Life	Temperature:25℃ IF:20mA	1000HRS	76PCS	0/1
2	High Temperature High Humidity	Temperature:85℃ 85%RH	1000HRS	76PCS	0/1
3	High Temperature Storage	Temperature:100℃	1000HRS	76PCS	0/1
4	Low Temperature Storage	Temperature:−40℃	1000HRS	76PCS	0/1
5	Temperature Cycling	85℃～25℃～−35℃ 15min～5min～15min	15Cycles	76PCS	0/1
6	Thermal Shock	85℃～25℃～−10℃ 5min～10sec～5min	15Cycles	76PCS	0/1
7	Solder Heat	Temperature:260℃±5℃	10SEC.	76PCS	0/1

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Precaution for Use LED:

1. Drive Method

LED is current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in a application, it is recommended that a current limiting resistor be incorporated in the drive circuit.
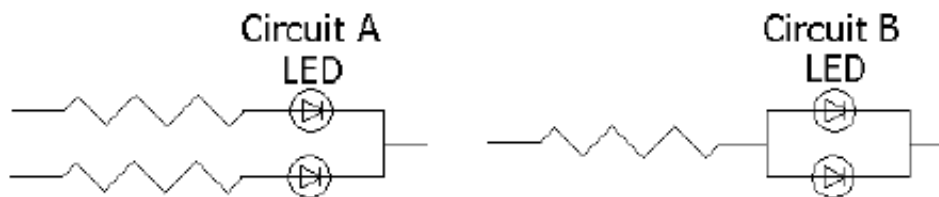
(a) Circuit A it is recommended circuit.
(b) Circuit B the brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

2. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change(Burn out will happen).

3. Storage

The Storage Temperature and RH are: 5℃ ~ 30℃, RH 60% or less.
Once the package is opened, the products should be used with in a week. Otherwise,
they should be kept in moisture proof package with moisture absorbent material (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.
Baking treatment: more than 24 hours at 60℃ ±5℃.

4. Electrostatic Discharge (ESD)

Static electricity or surge voltage will damage the LEDs
Suggestions to prevent ESD damage:
Use of a conductive wrist band or ante-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 events of manual working in process, make sure the devices are well protected
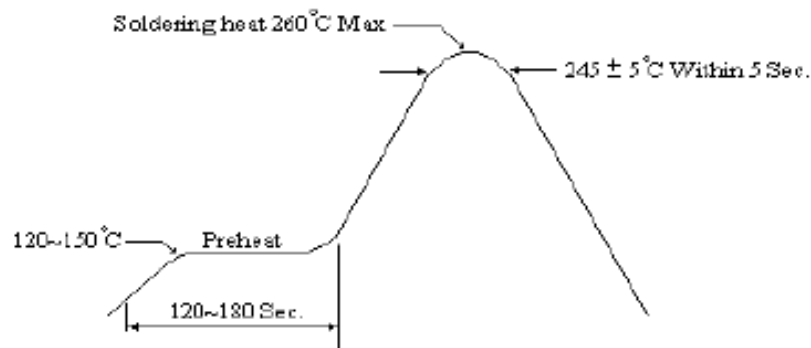from ESD at any time.

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5. Others

(a) If want to have the uniform luminance and color, please use the same binning number, and avoid using intermix to cause the differences of luminance and color.

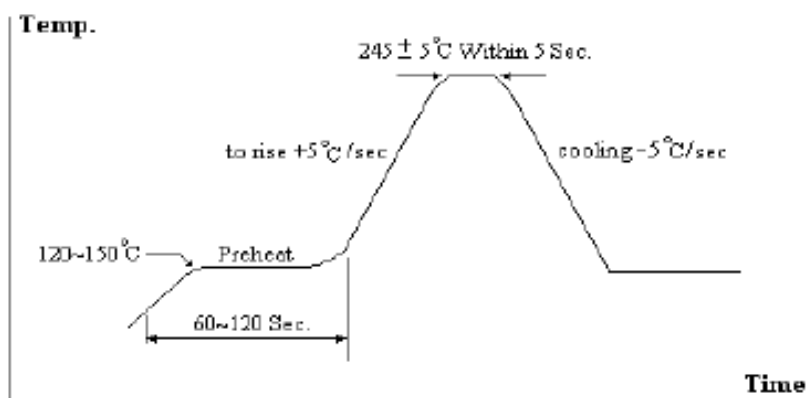(b) The appearance and specifications of the product may be modified for improvement without prior notice.

6. Soldering

Recommended soldering condition as shown below:

Soldering heat (DIP)

Soldering heat 260°C Max

245 ± 5°C Within 5 Sec.

120~150°C

Preheat

120~180 Sec.

Reflow Temp./Time

Temp.

245 ± 5°C Within 5 Sec.

to rise +5°C /sec

cooling-5°C/sec

120~150°C

Preheat

60~120 Sec.

Time

Soldering Iron

Temperature at tip of iron : 300°C Max. (25 W Max.)

Soldering Time : 3 sec. ± 1 sec.(one time only)

If temperature is higher, time should be shorter

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