

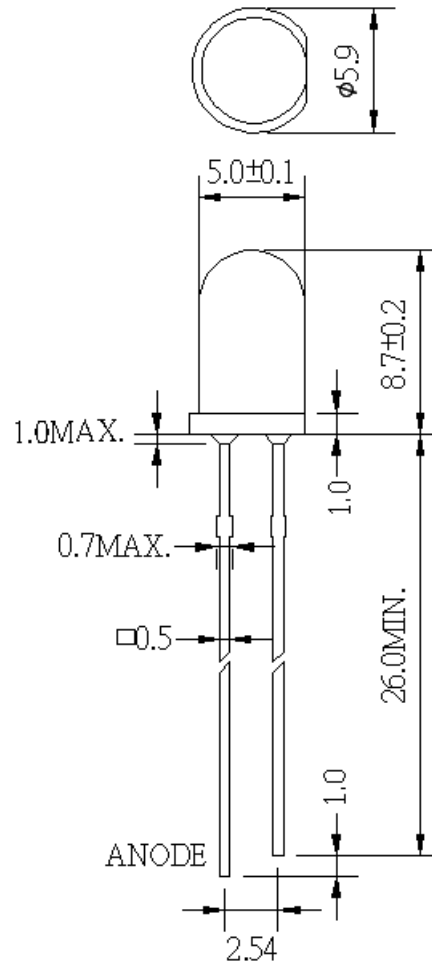


American Opto Plus LED Corp.

L513LN-QED-45D

5mm Red Diffused LED Lamp

PACKAGE DIMENSION



Item	Materials
Dice	GaAsP on GaP
Lens Color	Red Diffused

Notes

1. All dimensions are in millimeters
2. Tolerance is ± 0.01 inch/ 0.25 mm unless otherwise noted



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

	Symbol	Rating	Unit
Reverse Voltage	V _r	5	V
Reverse Current (V _r =5V)	I _r	10	μA
Power Dissipation	P _d	85	mW
Operating temperature	T _{opr}	-40~+85	°C
Storage temperature	T _{stg}	-40~+100	°C
Lead Solder Temperature	T _{slid}	260°C for 5 sec (1.6mm (1/16 inch) from body)	--

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

	Symbol	Test condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	IF=20mA	45	70	100	mcd
Viewing Angle	2Θ1/2		--	45	--	deg
Peak Wavelength	λ _p		--	635	--	nm
Dominant Wavelength	λ _d		620	625	630	nm
Spectral Half Width	Δλ		--	45	--	nm
Forward Voltage	V _F		1.8	2.0	2.6	V
Peak Forward Current (Duty 1/10 @ 1KHz)	I _{fp}		--	--	100	mA
Forward Current	I _f		--	20	--	mA

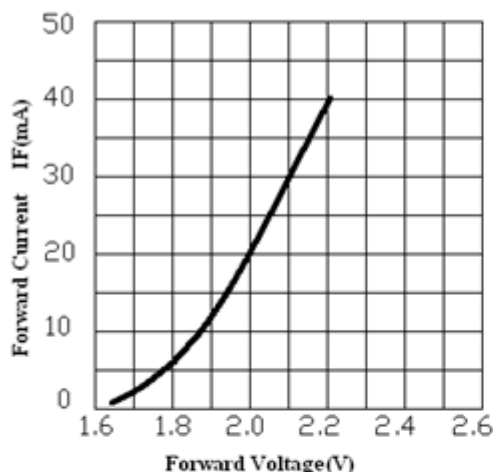


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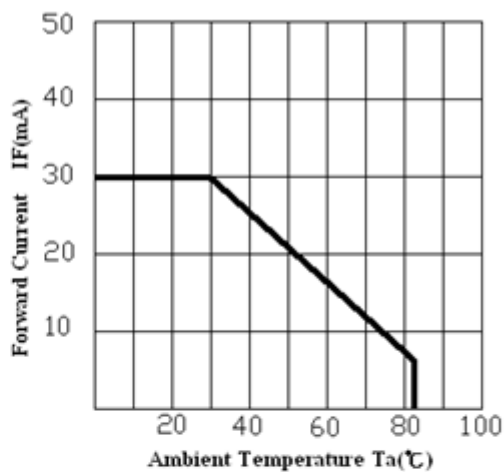
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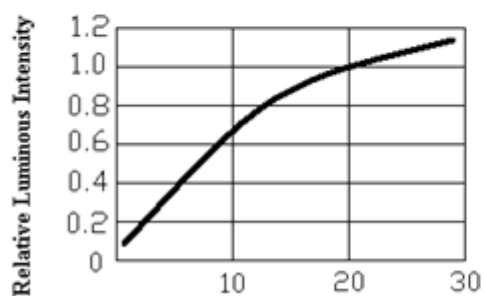
TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES



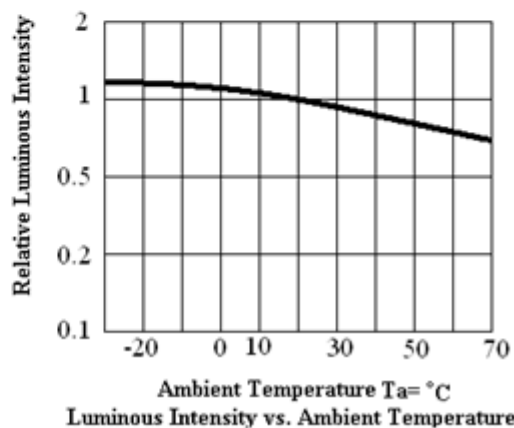
Forward Current vs. Forward Voltage



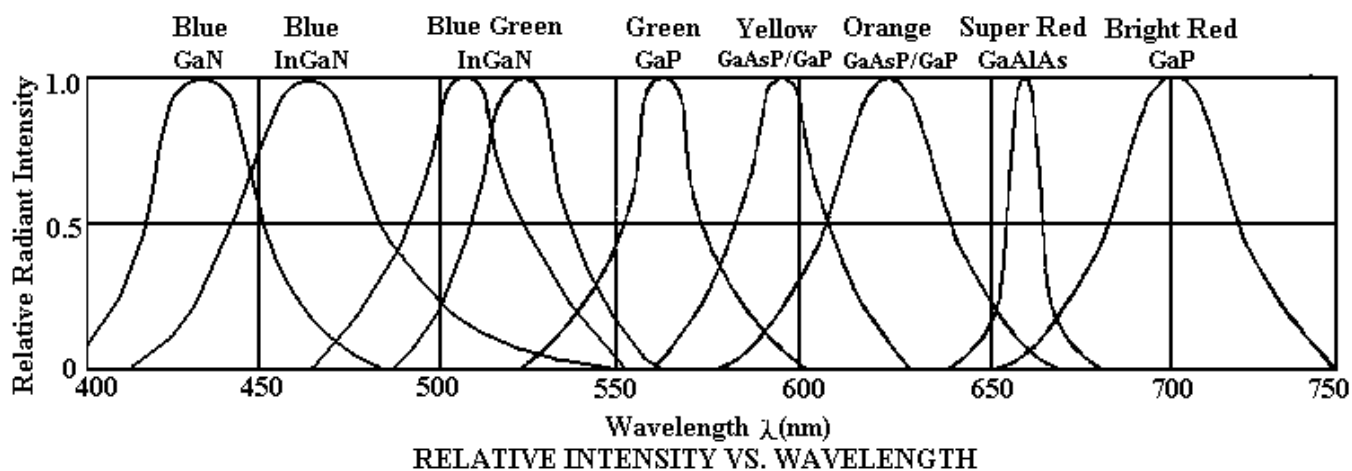
Forward Current Derating Curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



RELATIVE INTENSITY VS. WAVELENGTH



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RELIABILITY TEST

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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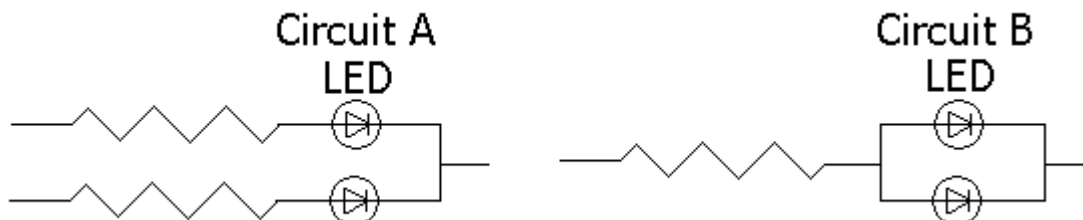
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PRECAUTION

1. Drive Method

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



a. Circuit (A) is recommended circuit

b. Circuit (B) the brightness of each LED might appear different due to the difference 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°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(silica gel). We suggest to use our products within a year. If the moisture absorbent material (silica gel) has faded away or LEDs exceed the storage time, baking treatment should be performed using the following conditions. Baking treatment: 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 of a conductive wrist band or anti-electrostatic glove when handling these LEDs. All devices, equipment and machinery must be properly grounded. Work table 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

5. Other

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

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



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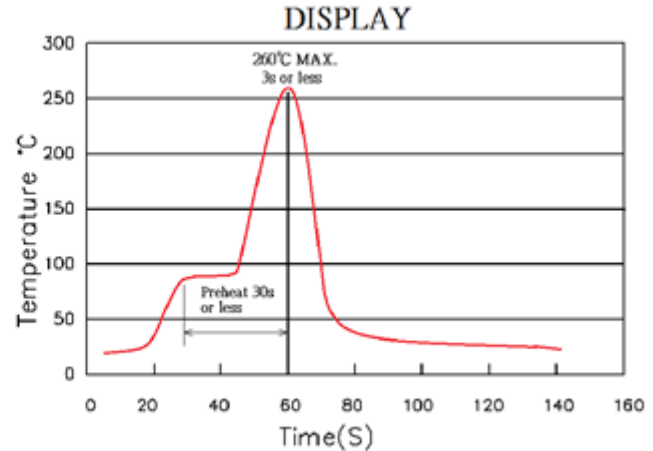
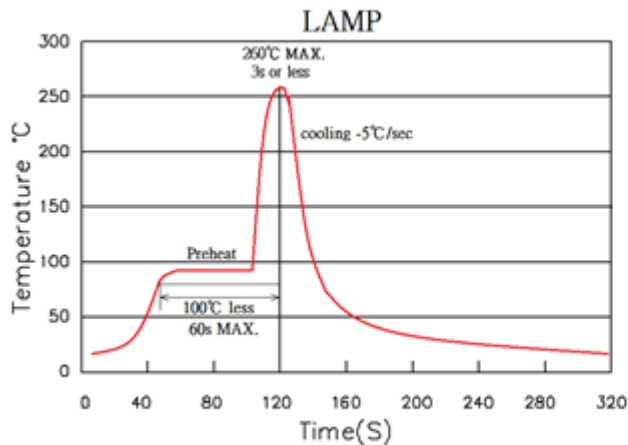
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6. Soldering

Recommended soldering condition shown below:

- Soldering heat (DIP)



Soldering Iron

Temperature at tip of iron: 350°C Max

Soldering Time: 3 second \pm 1 second (1 time only)

If temperature is higher, time should be shorter

- Reflow Temperature/Time (SMD)

