



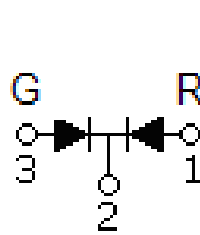
American Opto Plus LED Corp.

L319QEQGC

3mm Red and Green Bi-Color Lamp

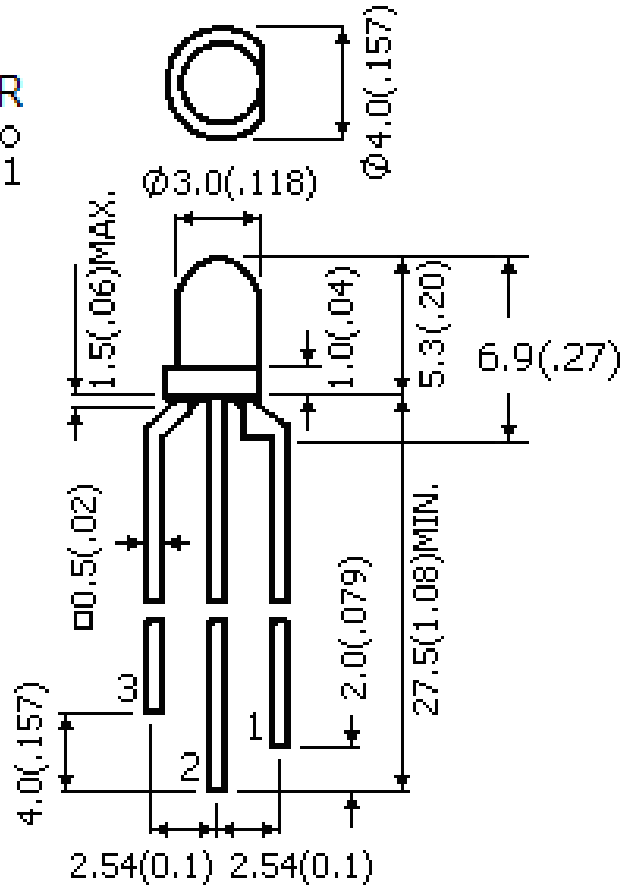
DESCRIPTION

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



FEATURES

- Emitted Color: Red / Green
- High Luminous Intensity
- Technology: GaAsP/GaP
- Viewing Angle: 36°



NOTES:

1. All dimensions are in millimeters tolerance is $\pm 0.25\text{mm}$ unless otherwise noted;

Part Number	Material	Lens Color	
		Emitted	Lens
L319QEQGC	GaAsP/GaP	Red / Green	Water Clear



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	20	mA
Peak Pulsed Forward Current	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_d	85	mW
Operating temperature range	T_{opr}	-40~+85	°C
Storage temperature range	T_{stg}	-40~+100	°C
Solder Dipping Temperature	T_{sld}	260°C for 5 sec	

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	$I_F=20mA$	1.7	2.1	2.6	V	
Luminous Intensity	I_v		R	17	35	55	mcd
			G	15	30	50	mcd
Peak Wavelength	λ_P		R	--	635	--	nm
			G	--	568	--	nm
Dominant Wavelength	λ_D		R	--	625	--	nm
			G	--	570	--	nm
Spectral Line Half-Width	$\Delta\lambda$		R	--	45	--	nm
			G	--	30	--	nm
Viewing Angle	$2\theta_{1/2}$			--	36	--	deg

*Note: I_{FP} = Pulse Width \leq 10ms, Duty Ratio \leq 1/10



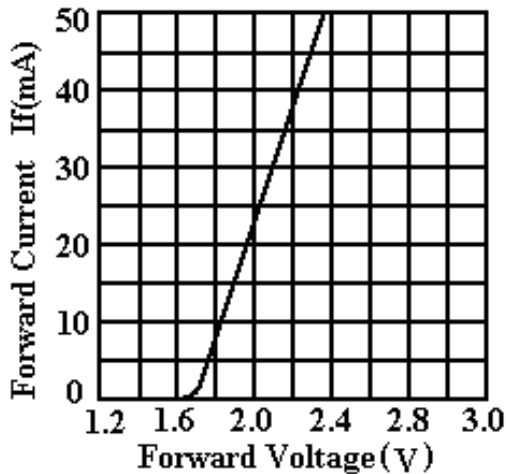
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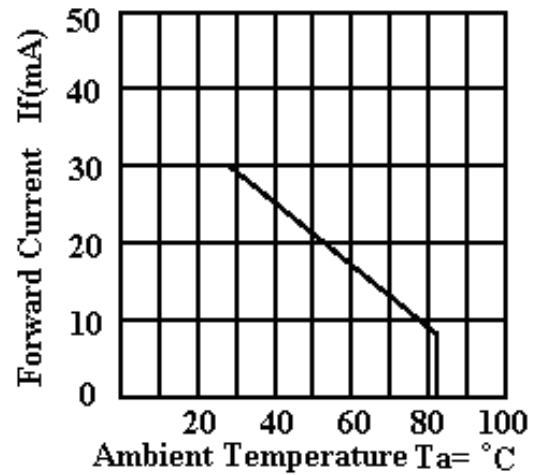
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TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES (RED)

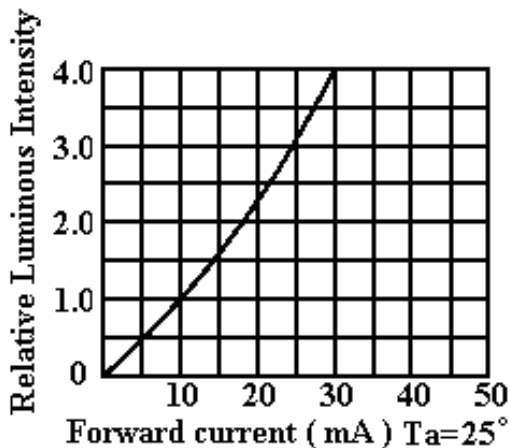
Red (GaAsP/GaP $\lambda_P=635\text{nm}$)



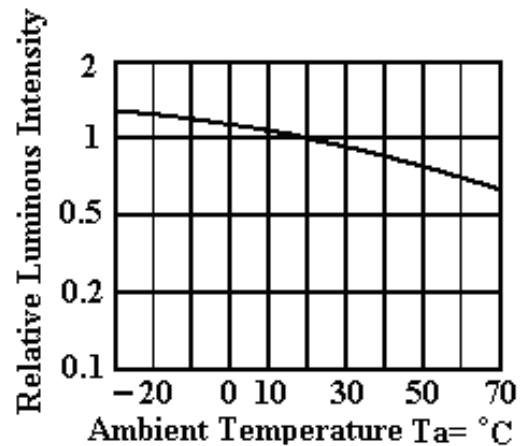
Forward current vs. Forward Voltage



Forward current Derating curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



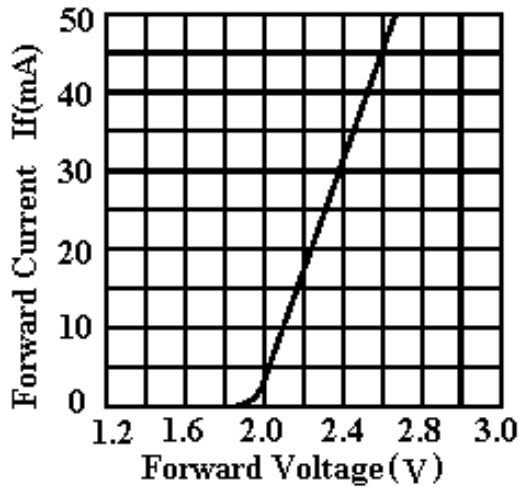
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L319QEQC

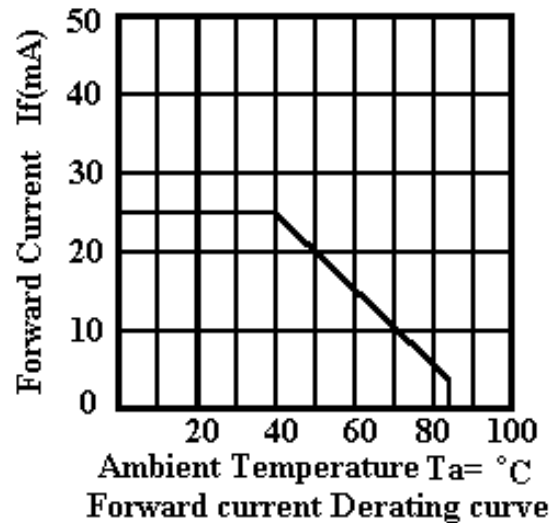
3mm Red and Green Bi-Color Lamp

TYPICAL ELECTRICAL-OPTICAL CHARACTERISTIC CURVES (GREEN)

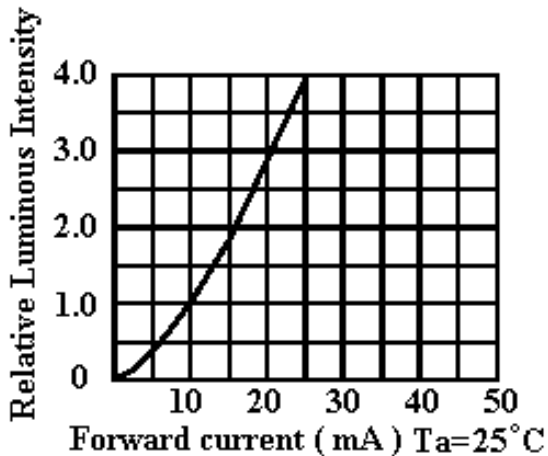
Green (GaP $\lambda_P=568\text{nm}$)



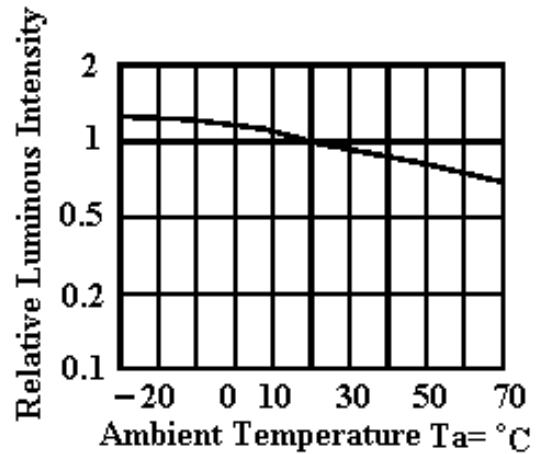
Forward current vs. Forward Voltage



Forward current Derating curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



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RELIABILITY TEST FOR LED LAMPS

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



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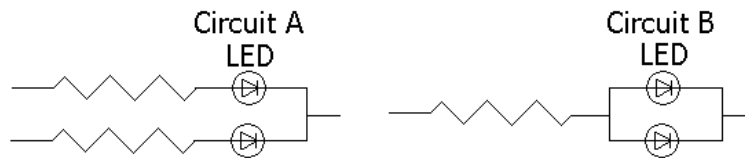
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PRECAUTION FOR LED

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°C ~ 30°C, 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°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 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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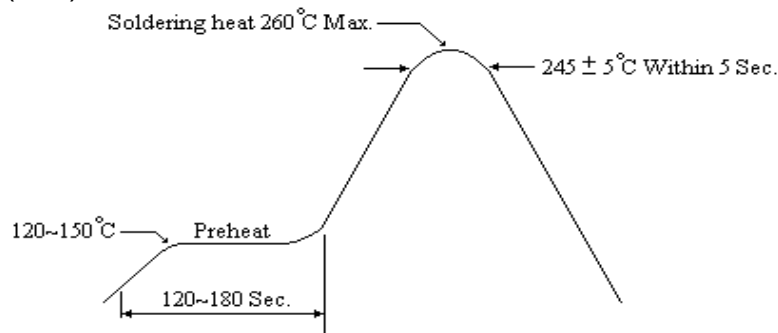
5. Others

- (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.

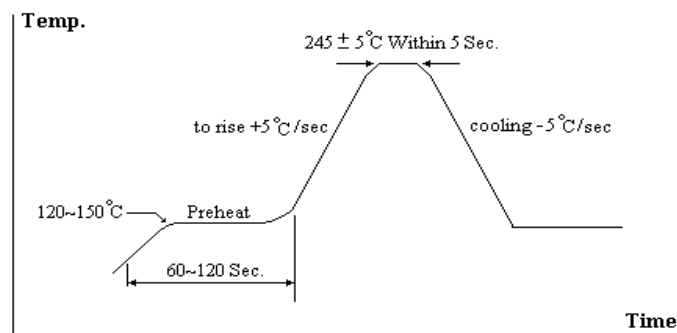
6. Soldering

Recommended soldering condition as shown below:

Soldering heat (DIP)



Reflow Temp./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