DATASHEET

LAMP

EALP05RDMRGBA0

Features

- Popular T-1 3/4 round package..
- Common anode.
- Built in red, green, and blue chips.
- Selected minimum intensities..
- Available on tape and reel.
- The product itself will remain within RoHS compliant version

Description

- The series is specially designed for applications requiring higher brightness.

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- The LED lamps are available with different colors, intensities, epoxy, colors, etc.

Applications

- Status indicators
- Commercial use
- Advertising Signs.
- Message board

Device Selection Guide

Materials	Emitted Color	Resin Color
AlGaInP	Red	Water Clear
AlGaInP	Brilliant Green	
GaN	Blue	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Red	Green/Blue	Unit
Forward Current	IF	30	50	mA
Pulse Forward Current (Duty 1/10 @ 1KHz)	IFP	100	160	mA
Operating Temperature	Topr	-40 ~ +85		℃
Storage Temperature	Tstg	-40 ~ +100		℃
Electrostatic Discharge	ESD	1000	2000	V
Soldering Temperature	Tsol	260		℃
Power Dissipation	Pd	110	120	mW
Reverse Voltage	VR	5		V

*Notes: Soldering time≦5 seconds.

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Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	SUG	2850	6000	9000	mcd	IF =20mA
		SUR	715	1800	3600		
		SUB	360	750	2850		
Viewing Angle	2θ1/2	---	---	35	---	deg	IF =20mA
Peak Wavelength	λp	SUG	---	522	---	nm	IF =20mA
		SUR	---	632	---		
		SUB	---	468	---		
Dominant Wavelength	λd	SUG	525	530	535	nm	IF =20mA
		SUR	620	624	628		
		SUB	465	470	475		
Spectrum Radiation Bandwidth	Δλ	SUG	---	35	---	nm	IF =20mA
		SUR	---	20	---		
		SUB	---	25	---		
Forward Voltage	V_F	SUG	2.8	3.2	3.6	V	IF =20mA
		SUR	1.8	2.2	2.6		
		SUB	2.8	3.2	3.6		
Reverse Courrent	I_R	SUG	---	---	50	uA	VR=5V

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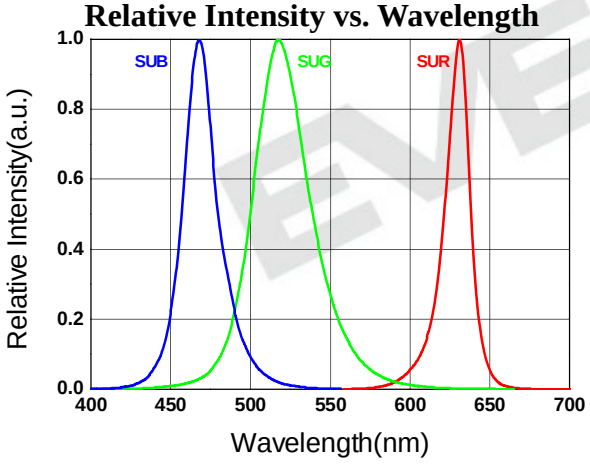
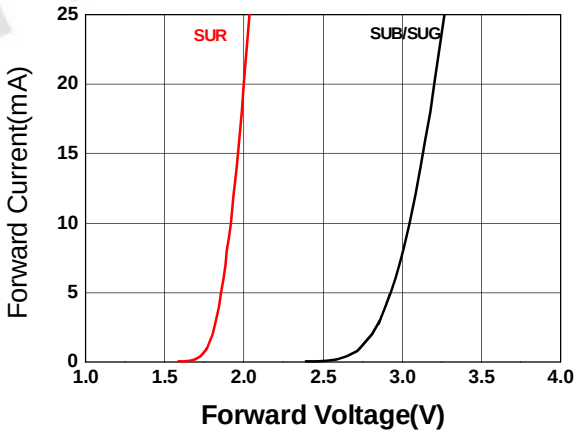
		SUR	---	---	10		
		SUB	---	---	50		

Typical Electro-Optical Characteristics Curves

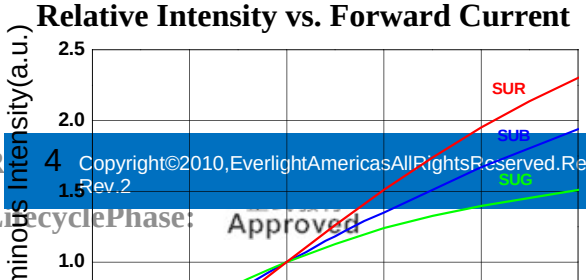
Relative Intensity vs. Wavelength



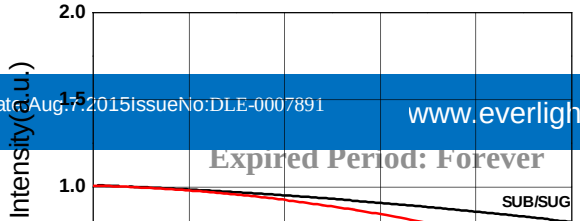
Forward Current vs. Forward Voltage



Relative Intensity vs. Forward Current



Relative Intensity vs. Ambient Temp.



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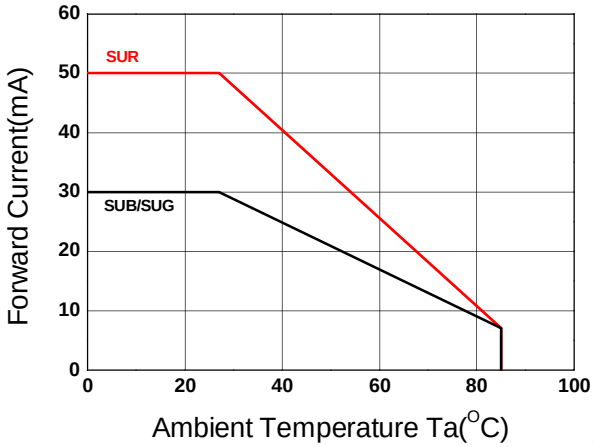
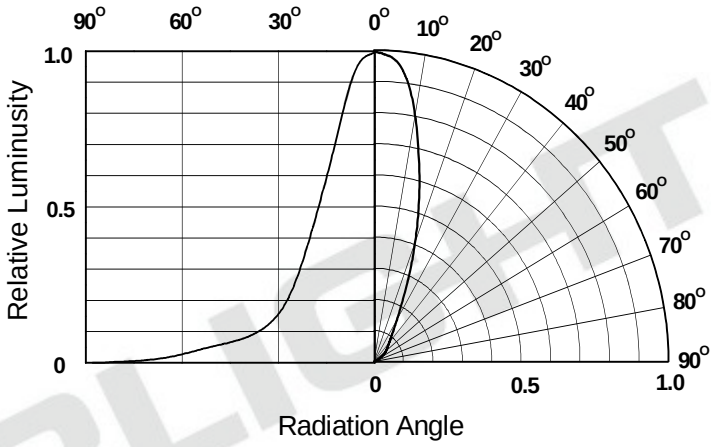
Forward Current vs. Ambient Temp.



Relative Intensity vs. Angle Displacement



Package Dimension

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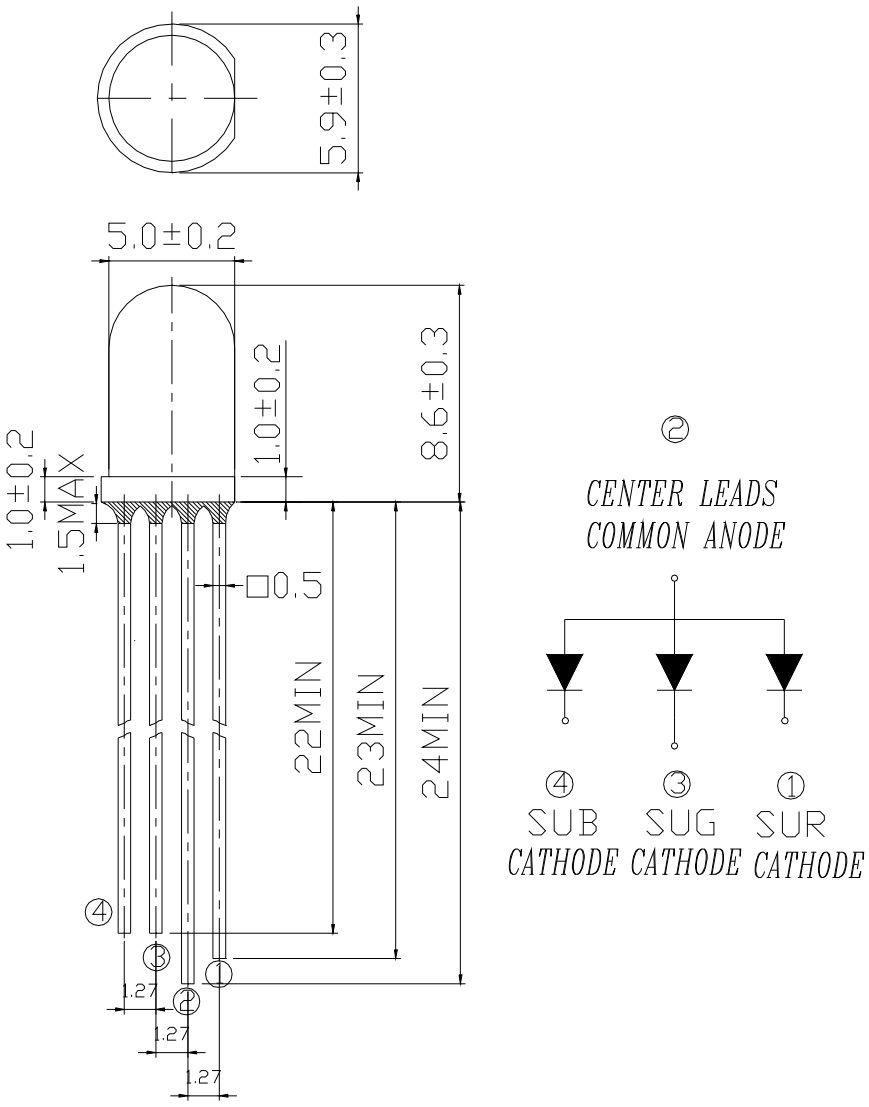

Note: Note:

1.All dimensions are in millimeters, and tolerance is 0.25mm except being specified.

2.Protruded resin under flange is 1.5mm Max. LED.

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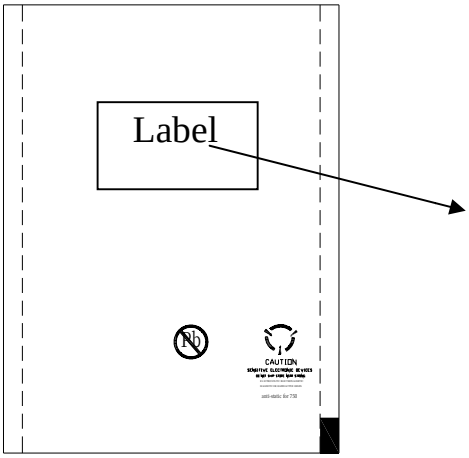
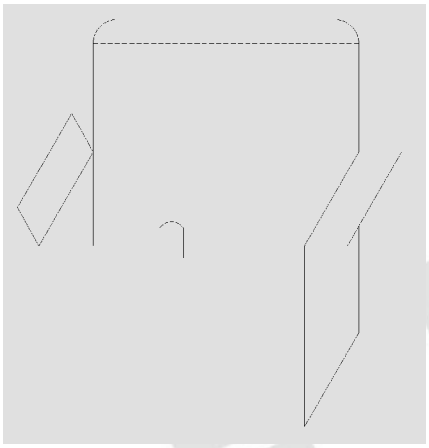
Packing Specification

■ Anti-electrostatic bag

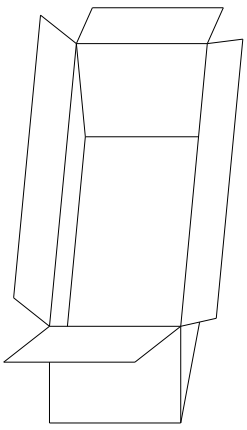


■ Inner Carton



■ CPN: Customer's Production Number
- P/N : Production Number
- QTY: Packing Quantity
- CAT: Ranks of Luminous Intensity
- HUE: Ranks of Color Rank
- REF: Ranks of Forward Voltage
- LOT No: Lot Number

■ Outside Carton



REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

■ Packing Quantity

1. 500 PCS/1 Bag, 5 Bags/1 Inner Carton
2. 10 Inner Cartons/1 Outside Carton

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Notes

1. Lead Forming
   - During lead formation, the leads should be bent at a point at least 3mm from the base of the epoxy bulb.
   - Lead forming should be done before soldering.
   - Avoid stressing the LED package during leads forming. The stress to the base may damage the LED's characteristics or it may break the LEDs.
   - Cut the LED leadframes at room temperature. Cutting the leadframes at high temperatures may cause failure of the LEDs.
   - When mounting the LEDs onto a PCB, the PCB holes must be aligned exactly with the lead position of the LED. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the LEDs.
2. Storage
   - The LEDs should be stored at 30°C or less and 70%RH or less after being shipped from Everlight Americas and the storage life limits are 3 months. If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
   - Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.
3. Soldering
   - Careful attention should be paid during soldering. When soldering, leave more then 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

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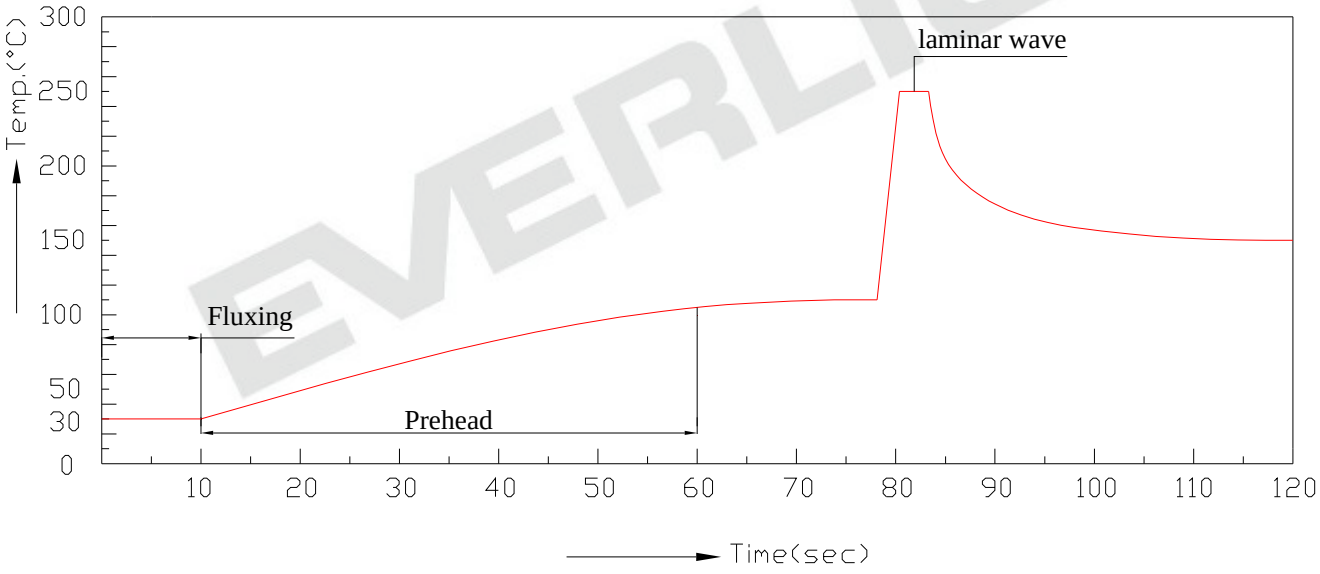
■ Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	100℃ Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)



■ Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.

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- Dip and hand soldering should not be done more than one time
- After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.
- A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or handsoldering at the lowest possible temperature is desirable for the LEDs.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

4. Cleaning
   - When necessary, cleaning should occur only with isopropyl alcohol at room temperature for a duration of no more than one minute. Dry at room temperature before use.
   - Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the LED
5. Heat Management
   - Heat management of LEDs must be taken into consideration during the design stage of LED application. The current should be de-rated appropriately by referring to the de-rating curve found in each product specification.
   - The temperature surrounding the LED in the application should be controlled. Please refer to the data sheet de-rating curve.

6. ESD (Electrostatic Discharge)
   - Electrostatic discharge (ESD) or surge current (EOS) can damage LEDs.
   - An ESD wrist strap, ESD shoe strap or antistatic gloves must be worn whenever handling LEDs.
   - All devices, equipment and machinery must be properly grounded.
   - Use ion blower to neutralize the static charge which might have built up on surface of the LEDs plastic lens as a result of friction between LEDs during storage and handing.

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7. Other

- Above specification may be changed without notice. Everlight Americas will reserve authority on material change for above specification.
- When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. Everlight Americas assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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