

### ELUA2835TG0(CM) Series



#### Introduction

The Everlight ELUA2835 package has high efficacy, low power consumption, wide viewing angle and a compact form factor that is suitable for UVA application.

#### Features

- ◆ Low power UVA LED
- ◆ Dimension 2.8mm\*3.5mm
- ◆ ESD protection up to 2KV
- ◆ RoHS compliant
- ◆ Pb free
- ◆ EU REACH compliant
- ◆ Halogen Free compliant
- ◆ (Br<900ppm, Cl<900ppm, Br+Cl<1500ppm)

#### Applications

- ◆ UV Nail
- ◆ UV Counterfeit
- ◆ UV Catch mosquitoes

**Product Nomenclature****ELUA2835TG0-PXXXXYY3040150-VA1D(CM)**

EL = Everlight

UA = UVA

2835 = 2.8mm x 3.5mm Package

T = Package Material: PCT

G = Coating: Ag

0 = Angle: 100°

P = Peak Wavelength

XXXX = Wavelength Range <sup>[1]</sup>

YY = Minimum Radiant Flux Spec <sup>[2]</sup>

3040 = Forward Voltage Spec: 3.0~4.0V

150 = Forward Current: 150mA

V = Chip Type: Vertical

A = Chip Size: 15mil

1 = Chip QTY: 1 chip

D = Process Type: Dispensing

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Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	I <sub>F</sub>	180	mA
Max. ESD Resistance	V <sub>B</sub>	2000	V
Thermal Resistance	R <sub>th</sub>	15	°C/W
Max. Junction Temperature	T <sub>J</sub>	90	°C
Operating Temperature	T <sub>Opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>Stg</sub>	-40 ~ +85	°C

PN of the ELUA2835TG0 series: UVA LEDs

Order Code of ELUC2835TG0	Minimum Radiant Flux (mW)	Typical Radiant Flux (mW)	Maximum Radiant Flux (mW)	Peak Wavelength (nm)	Forward Voltage (V)	Forward Current (mA)
ELUA2835TG0-P6070SC53040150-VA1D(CM)	210	240	270	360-370	3.0~4.0	150
ELUA2835TG0-P9000SC13040150-VA1D(CM)	210	250	270	390~400	3.0~4.0	150

## Product Binning

### Radiant Flux Bins

Bin Code	Minimum Radiant Flux (mW)	Maximum Radiant Flux (mW)
SC3	210	250
SC5	250	270
SC7	270	300
SC9	300	330

#### Notes:

- 1.Radiant flux measurement tolerance:  $\pm 10\%$ .
- 2.Forward voltage bins are defined at  $I_F=150\text{mA}$  operation.

### Peak Wavelength Bins

Bin	Minimum Peak Wavelength (nm)	Maximum Peak Wavelength (nm)
W36A	360	365
W36B	365	370
W39A	390	395
W39B	395	400

#### Notes:

- 1.Peak Wavelength measurement tolerance:  $\pm 1\text{nm}$ .
- 2.Forward voltage bins are defined at  $I_F=150\text{mA}$  operation.

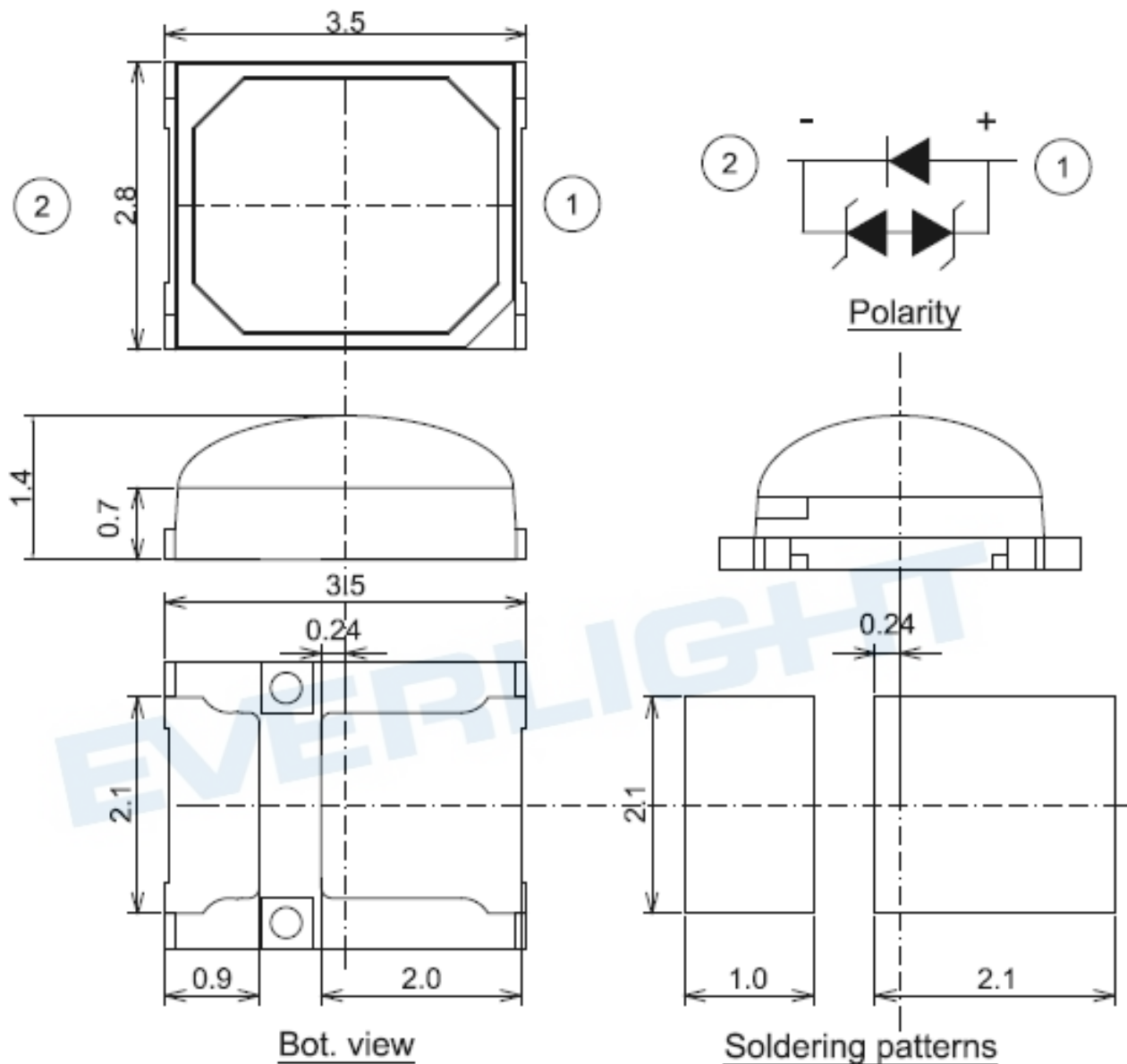
### Forward Voltage Bins

Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
3031	3.0	3.1
3132	3.1	3.2
3233	3.2	3.3
3334	3.3	3.4
3435	3.4	3.5
3536	3.5	3.6
3637	3.6	3.7
3738	3.7	3.8
3839	3.8	3.9
3940	3.9	4.0

#### Notes:

- 1.Forward voltage measurement tolerance:  $\pm 2\%$ .
- 2.Forward voltage bins are defined at  $I_F=150\text{mA}$  operation.

## Mechanical Dimension



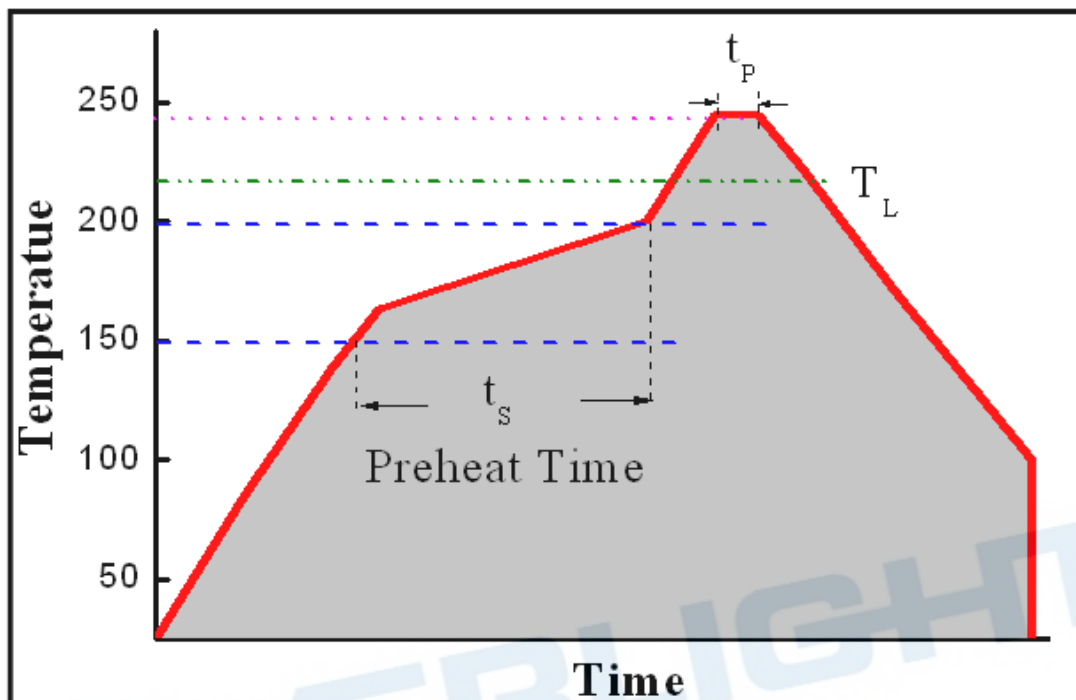
### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.2\text{mm}$ .
3. The thermal pad is electrically unity from the Cathode and contact pads.
4. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

## Reflow Soldering Characteristics

### For Reflow Process

- ELUA series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.

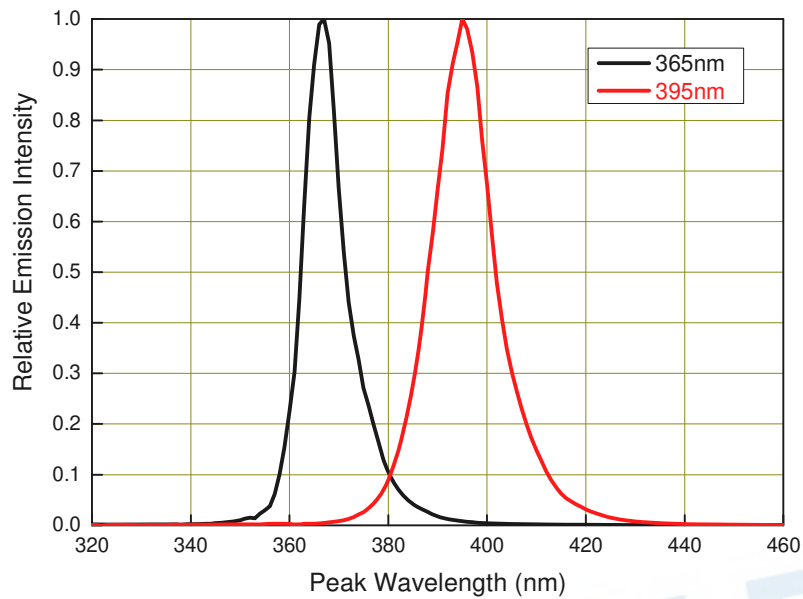


Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time ( $t_s$ )	60-120 S
Liquid Temperature ( $T_L$ )	217 °C
Time maintained above $T_L$	60-90 S
Peak Temperature ( $T_P$ )	240±5 °C
Peak Time ( $t_P$ )	Max 20 S
Ramp-Down Rate	3-5 °C/S

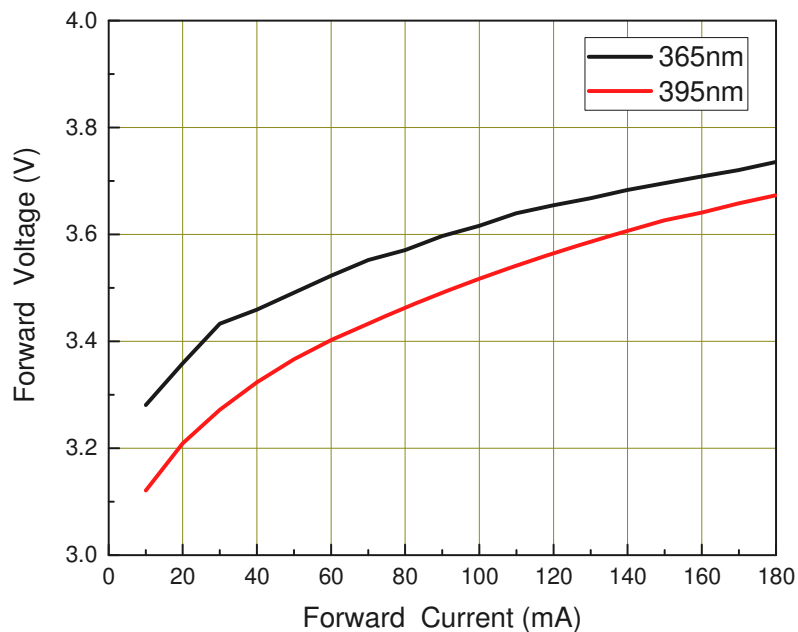
- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

## Wavelength Characteristics

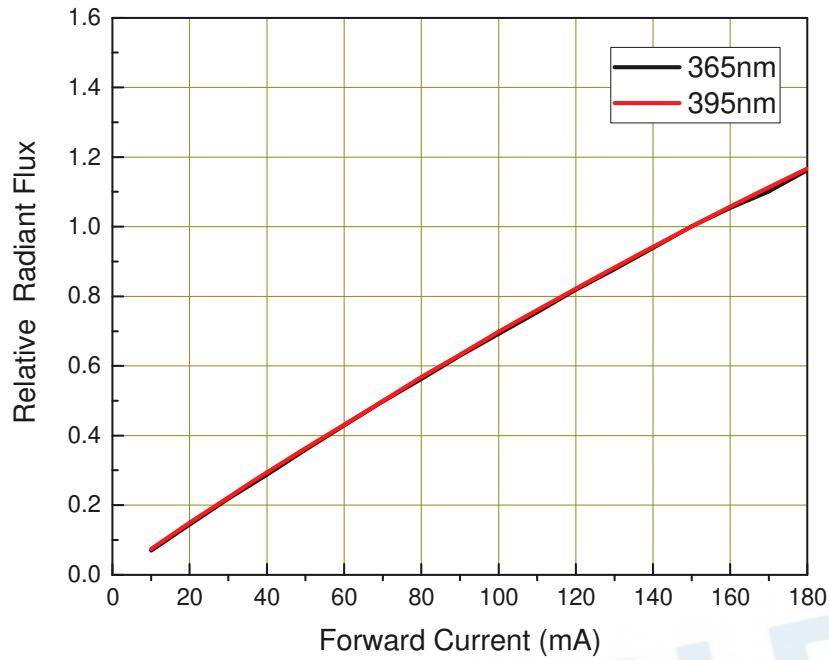
**Relative Spectral Distribution**  
**@ Substrate Temperature = 25°C**



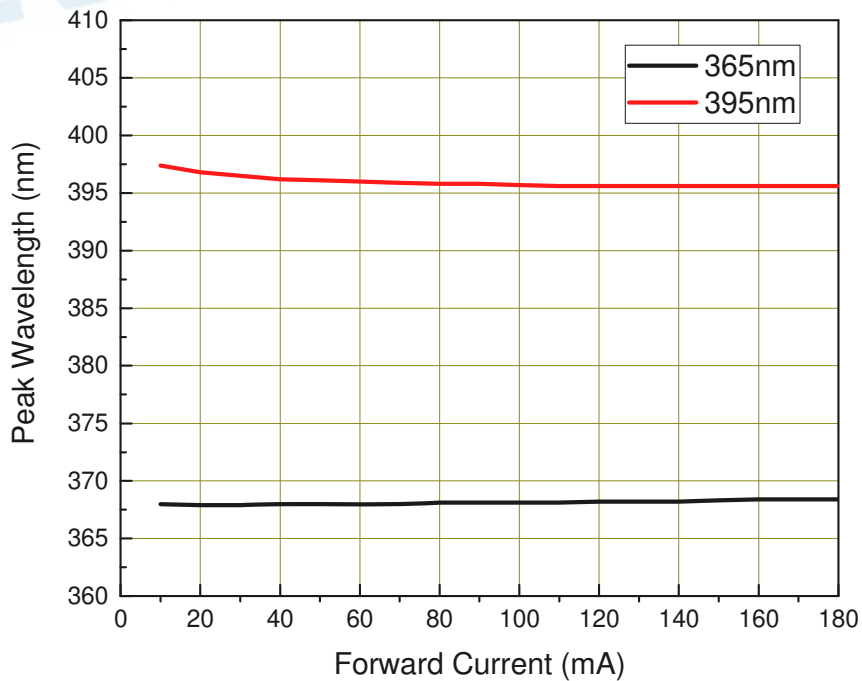
**Forward Voltage vs. Forward Current**  
**@ Substrate Temperature = 25°C**



**Relative Radiant Flux vs. Forward Current**  
**@ Substrate Temperature = 25°C**

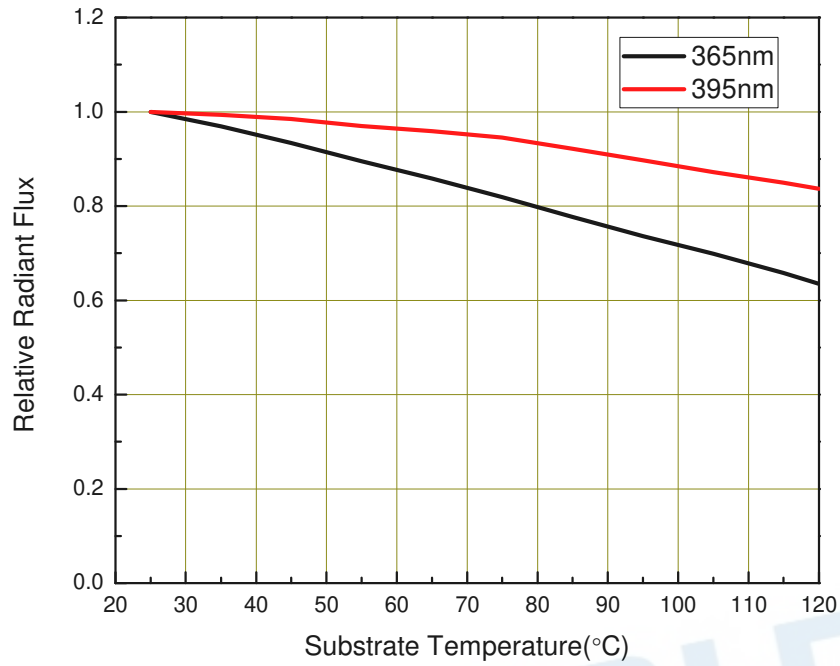


**Peak Wavelength vs. Forward Current**  
**@ Substrate Temperature = 25°C**

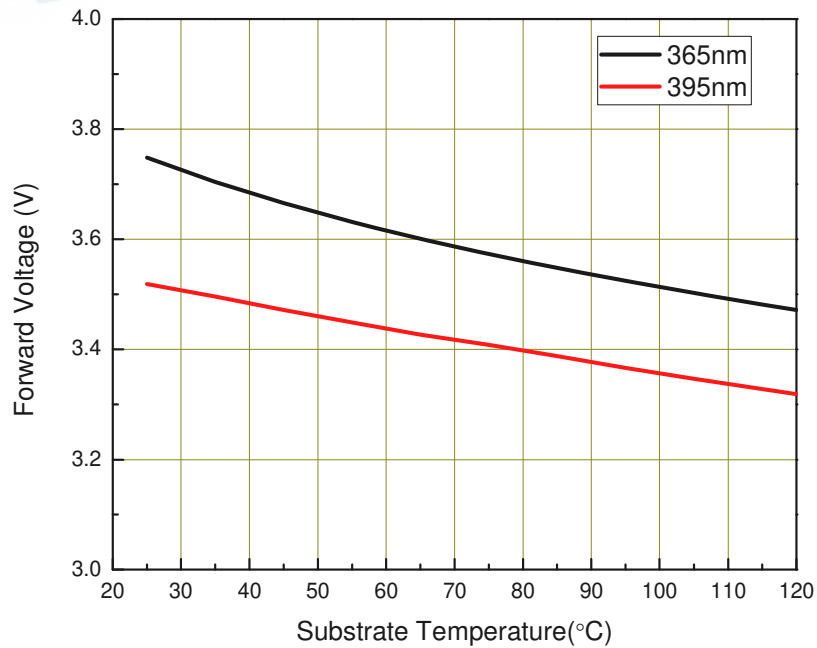




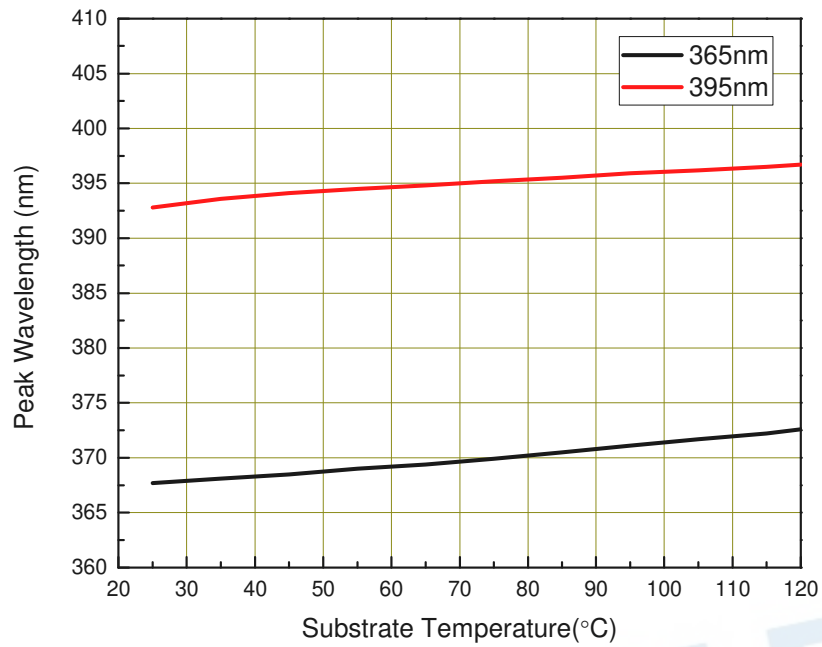
### Relative Radiant Flux vs. Substrate Temperature @Forward Current = 150mA



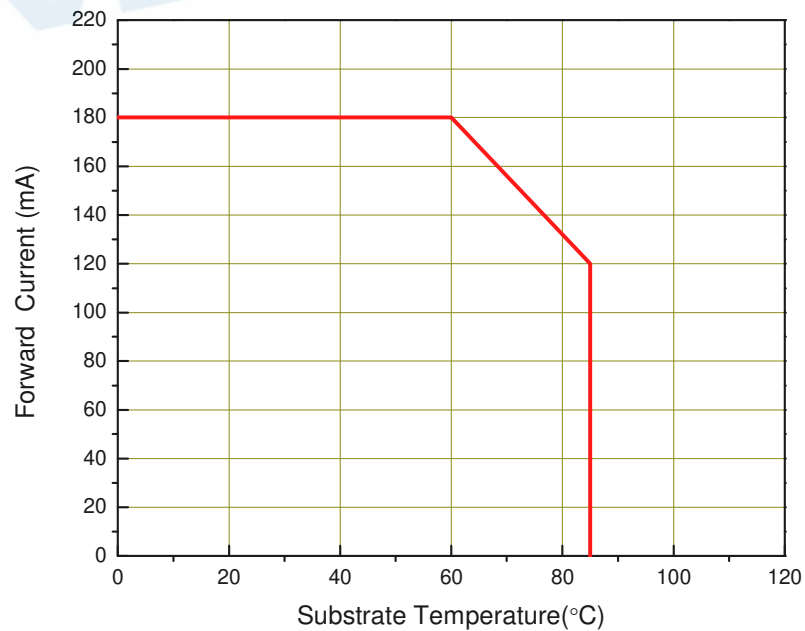
### Forward Voltage vs. Substrate Temperature @Forward Current = 150mA



## Peak Wavelength vs. Substrate Temperature @Forward Current = 150mA

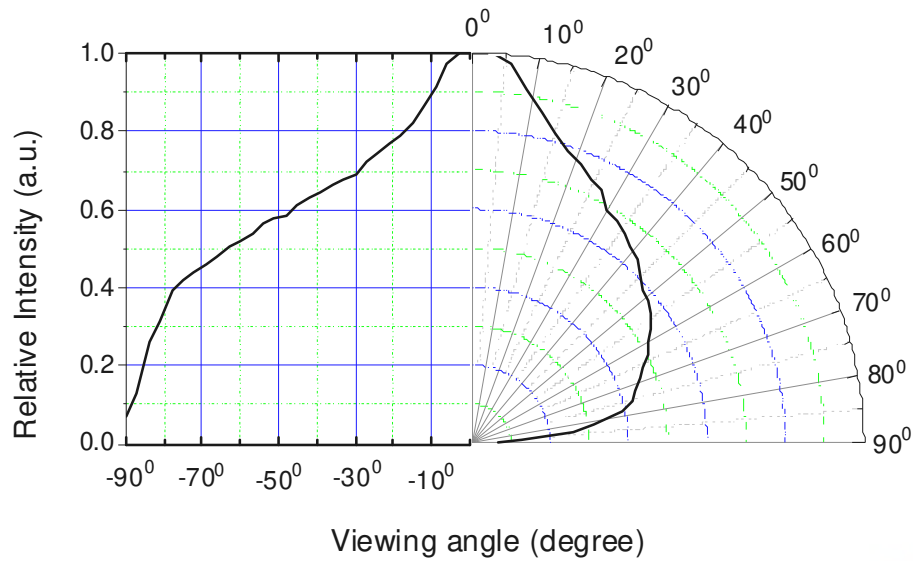


## Derating Curve



## Typical Radiation Patterns

### Typical Diagram Characteristics of Radiation for ELUA2835TG0



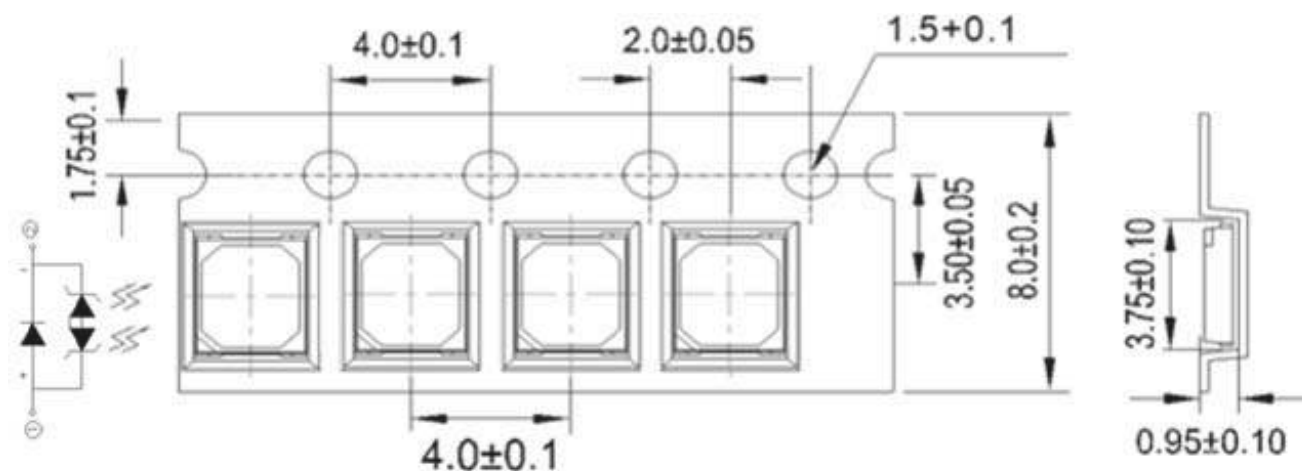
#### Notes:

1. 201/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is  $\pm 5^\circ$

## Emitter Tape Packaging

Carrier Tape Dimensions as the following:

Reel: 2000pcs

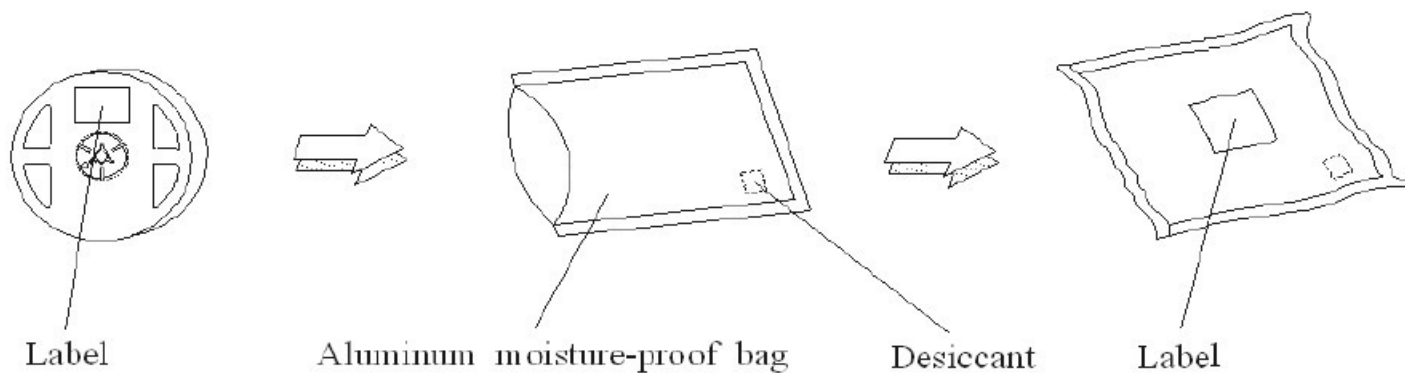


Unit = mm

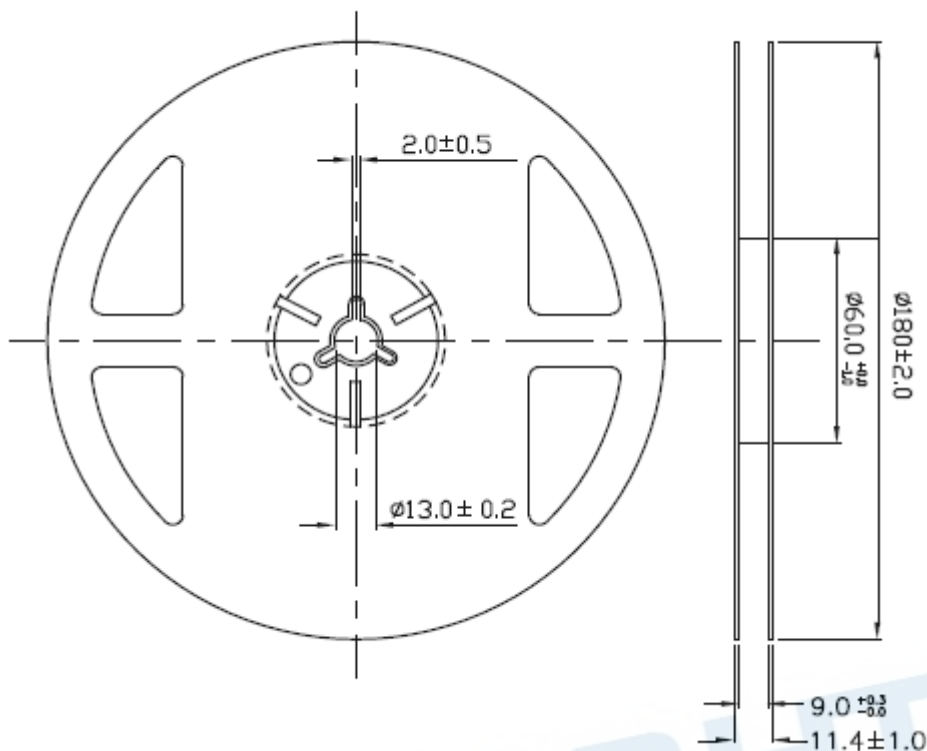
### Note

1. Tolerance unless mentioned is  $\pm 0.1$  mm;
2. smallest packing quantity do not be smaller 200PCS

## Moisture Resistant Packaging



## Emitter Reel Dimensions



### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1$  mm.

## Product Labeling

### Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin


HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place

RoHS	<b>EVERLIGHT</b>	5
CPN: XXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX		
P/N: XXXXXXXXXXXX		
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX		
LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX		
QTY: 0123456789 HUE: XXXXXXXXXXXX		
CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX		
REFERENCE: BTPYYMDDXXXXX		
MSL-X MADE IN XXXXXX		



## Precautions for Use

### 1. Over-current-proof

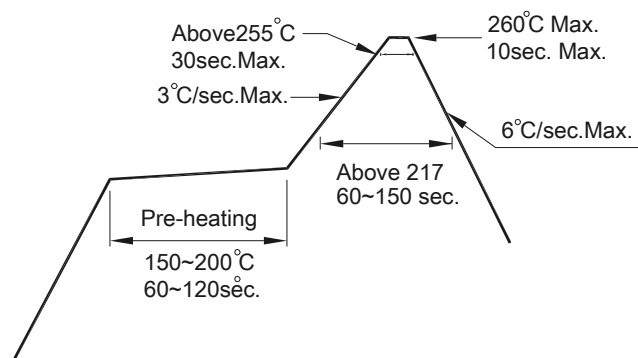
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

### 2. Assemblies

Do not stack assemblies containing Everlight ELUA2835 LEDs to prevent damage to the optical surface of LEDs. Forces applied to the optical surface may result in the surface being damaged.

### 3. Soldering Condition

#### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

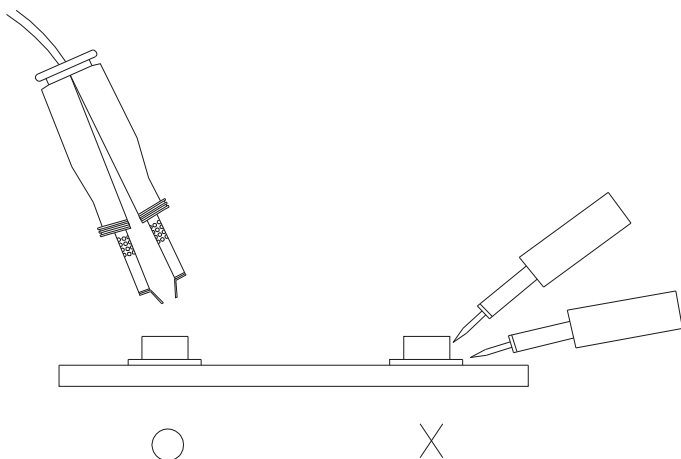
3.4 After soldering, do not warp the circuit board.

### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

### 5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



## Storage Conditions

- Before the package is opened: The LEDs should be stored at 30°C or less and 85%RH or less after being shipped from Everlight and the storage life limits are 1 year. The LEDs can be stored up to 3 years if in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED's floor life is 168H under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5°C for 24 hours.

## DISCLAIMER

- EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
- The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
- The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
- When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the 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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- This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized EVERLIGHT sales agent for special application request.
- **The product is not suitable for use in an ammonia environment.**