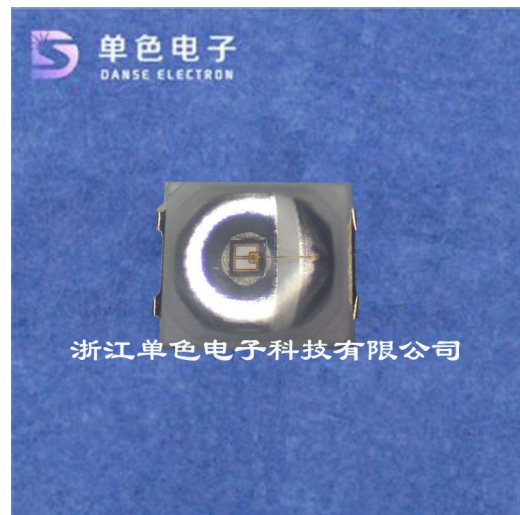


# PRODUCT SPECIFICATIONS

## DS-UV365C2-2835CB-M-05

### ◆ Features

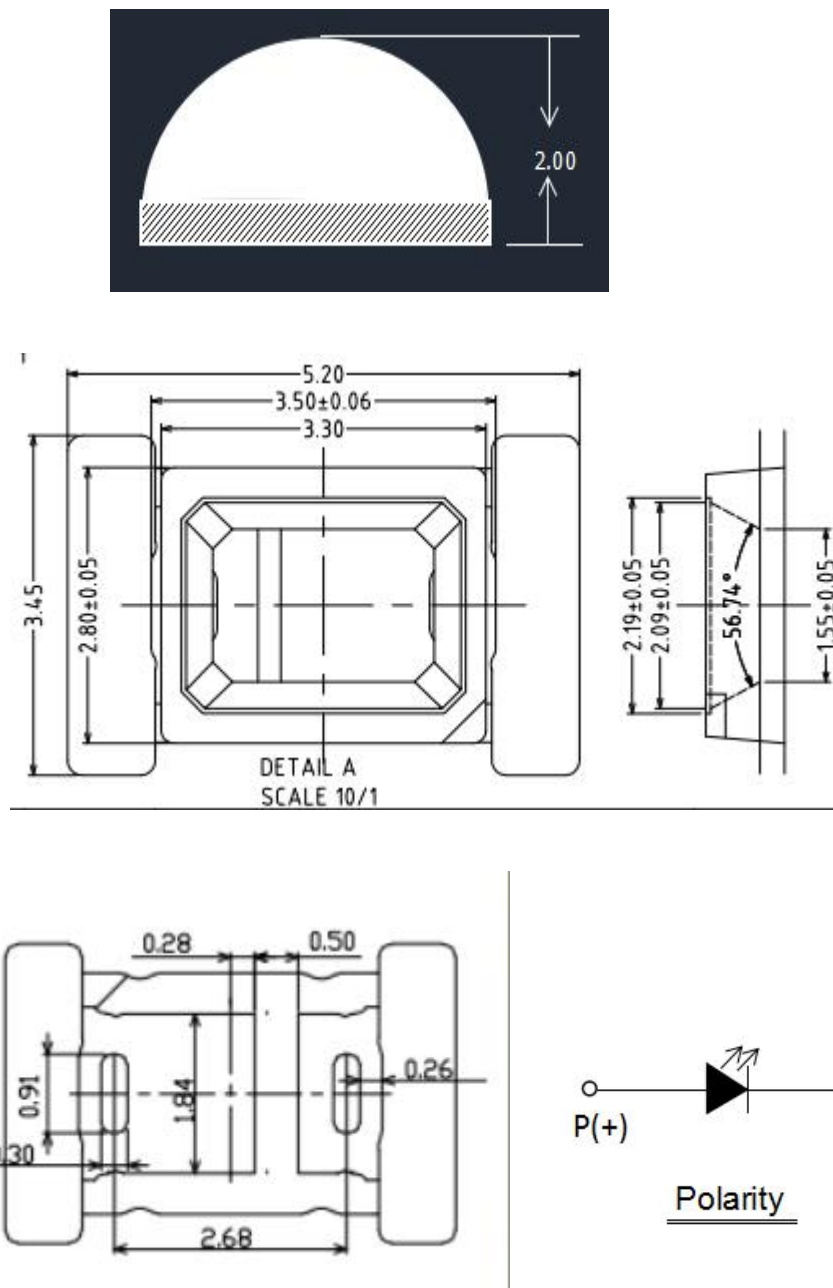
- Low Voltage
- High Brightness
- Dimension 2.80mm\* 3.50mm\* 2.00mm
- High Luminous Efficiency
- Long Operation Life
- High anti-ESD Ability
- RoHS compliant



### ◆ Applications

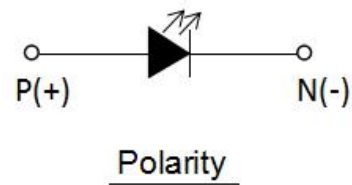
- UV Security Check
- UV Sterilization System
- UV Photo-catalyst
- UV Sensor Light
- UV Jewelry Appraisal
- UV Plant Growth

## Mechanical Dimension



### Notes:

- 1、Dimensions are in millimeters.
- 2、Tolerances unless mentioned are  $\pm 0.1\text{mm}$



## Absolute Maximum Ratings

| Parameter                          | Symbol | Ratings    | Unit |
|------------------------------------|--------|------------|------|
| Power Dissipation/DICE             | Pd     | 0.5        | W    |
| DC Forward Current/DICE            | IF     | 150        | mA   |
| Single Chip Pulsed Forward Current | IFP    | 180        | mA   |
| Reverse Voltage                    | VR     | 5          | V    |
| Operating Temperature              | Topr   | -30 ~ +80  | °C   |
| Storage Temperature                | Tstg   | -40 ~ +100 | °C   |

## Electro-Optical Characteristic

| Parameter       | Symbol | Value |      |      | Unit | Test condition |
|-----------------|--------|-------|------|------|------|----------------|
|                 |        | Min.  | Typ. | Max. |      |                |
| Forward Voltage | Vf     | 3.4   | -    | 4.0  | V    | If=150mA       |
| Reverse Current | Ir     | -     | -    | 10   | μA   | Vr=5V          |
| Viewing angle   | 2θ1/2  | -     | 90   | -    | Deg  | If=150mA       |
| Peak wavelength | λP     | 365   | -    | 375  | nm   | If=150mA       |
| Luminous Flux   | Φe     | 100   | -    | 180  | mw   | If=150mA       |

**Notes:**

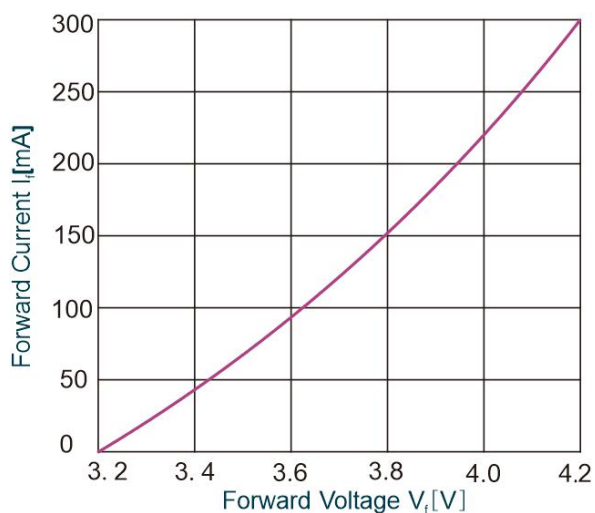
- 1、Radiant flux measurement tolerance: ±10%.
- 2、The data of luminous flux measured at thermal pad=25°C
- 3、Typical radiant flux or light output performance is operated within the condition guided by this datasheet.

## Product Binning(I<sub>F</sub>=150mA)

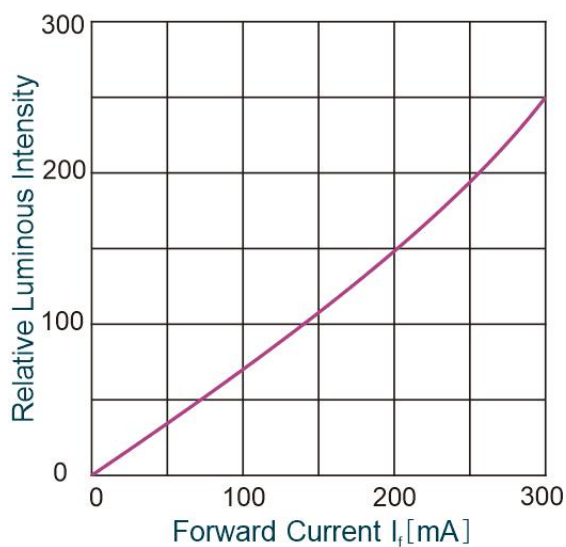
|     | Forward Voltage Bins |     |     |  |  | Luminous Flux Bins |     |     |     |  |  |  |
|-----|----------------------|-----|-----|--|--|--------------------|-----|-----|-----|--|--|--|
| BIN | V1                   | V2  | V3  |  |  | P1                 | P2  | P3  | P4  |  |  |  |
| Min | 3.4                  | 3.6 | 3.8 |  |  | 100                | 120 | 140 | 160 |  |  |  |
| Max | 3.6                  | 3.8 | 4.0 |  |  | 120                | 140 | 160 | 180 |  |  |  |

## Typical Characteristics Curves

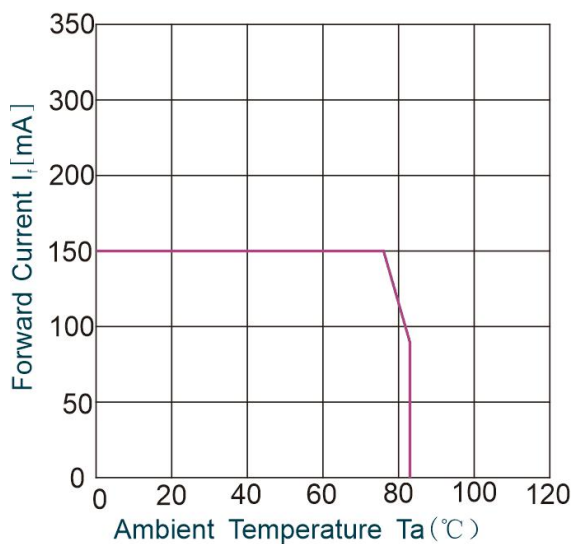
Forward Voltage  
vs. Forward Current  $T_a=25^{\circ}\text{C}$



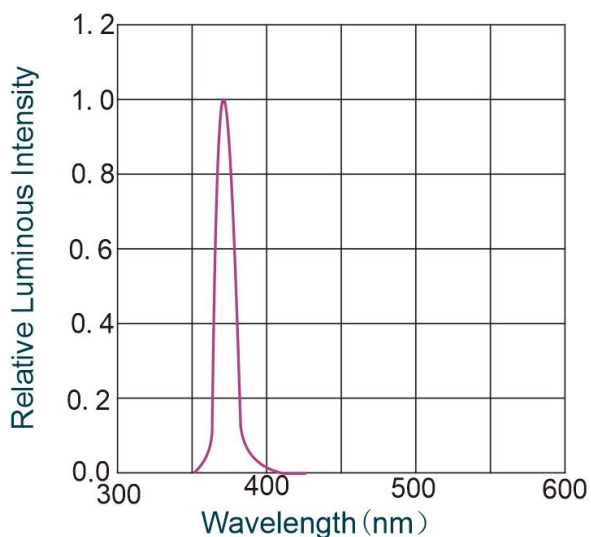
Forward Current  $T_a=25^{\circ}\text{C}$   
vs. Relative Luminous Intensity



Ambient Temperature  
vs. Maximum Forward Current



Relative Spectral Distribution



### Test items and results of reliability

| Type                   | Test Item                    | Test Conditions   | Note      | Number of Damaged |
|------------------------|------------------------------|---|-----------|-------------------|
| Operation Sequence     | Life Test                    | $T_a=25^{\circ}\text{C}$<br>$I_F=150\text{mA}$  | 1000 hrs  | 0/22              |
|                        | High Humidity Heat Life Test | $85^{\circ}\text{C}$ RH=85%<br>$I_F=150\text{mA}$   | 500 hrs   | 0/22              |
|                        | Low Temperature Life Test    | $T_a=-20^{\circ}\text{C}$<br>$I_F=150\text{mA}$   | 1000 hrs  | 0/22              |
| Environmental Sequence | Temperature Cycle            | $-45^{\circ}\text{C}$ 30min<br>$\uparrow\downarrow 20$ min<br>$105^{\circ}\text{C}$ 30min | 100 cycle | 0/22              |
|                        | Thermal Shock                | $-10^{\circ}\text{C}$ 15min<br>$\uparrow\downarrow 5$ sec<br>$100^{\circ}\text{C}$ 15min  | 100 cycle | 0/22              |
|                        | High Humidity Heat Cycle     | $30^{\circ}\text{C} \leftrightarrow 65^{\circ}\text{C}$<br>90%RH 24hrs/1cycle             | 10 cycle  | 0/22              |
|                        | High Temperature Storage     | $T_a=100^{\circ}\text{C}$   | 1000 hrs  | 0/22              |
|                        | Humidity Heat Storage        | $T_a=85^{\circ}\text{C}$<br>RH=85%  | 1000 hrs  | 0/22              |
|                        | Low Temperature Storage      | $T_a=-40^{\circ}\text{C}$   | 1000 hrs  | 0/22              |

### Judgment criteria of failure for the reliability

| Measuring items    | Symbol       | Measuring conditions | Judgment criteria for failure |
|--------------------|--------------|----------------------|-------------------------------|
| Forward voltage    | $V_F$ (V)    | $I_F=150\text{mA}$   | Over $U^1 \times 1.2$         |
| Reverse current    | $I_R$ (uA)   | $V_R=5\text{V}$      | Over $U^1 \times 2$           |
| Luminous intensity | $I_v$ ( mcd) | $I_F=150\text{mA}$   | Below $S^1 \times 0.5$        |

Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

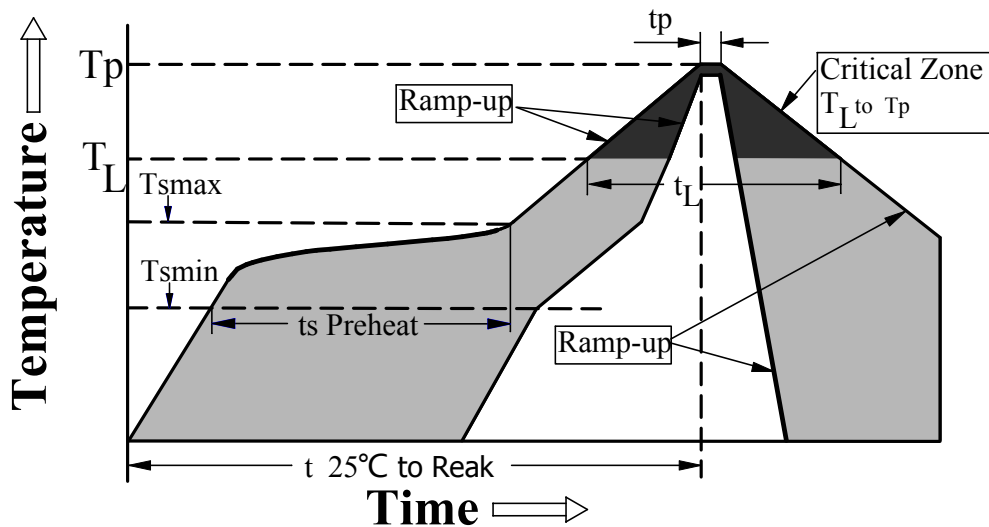
- **Soldering :**

## 1. Manual Soldering

The temperature of the iron tip should not be higher than 350°C and Soldering time to be within 3 seconds per solder-pad.

## 2. Reflow Soldering Characteristics

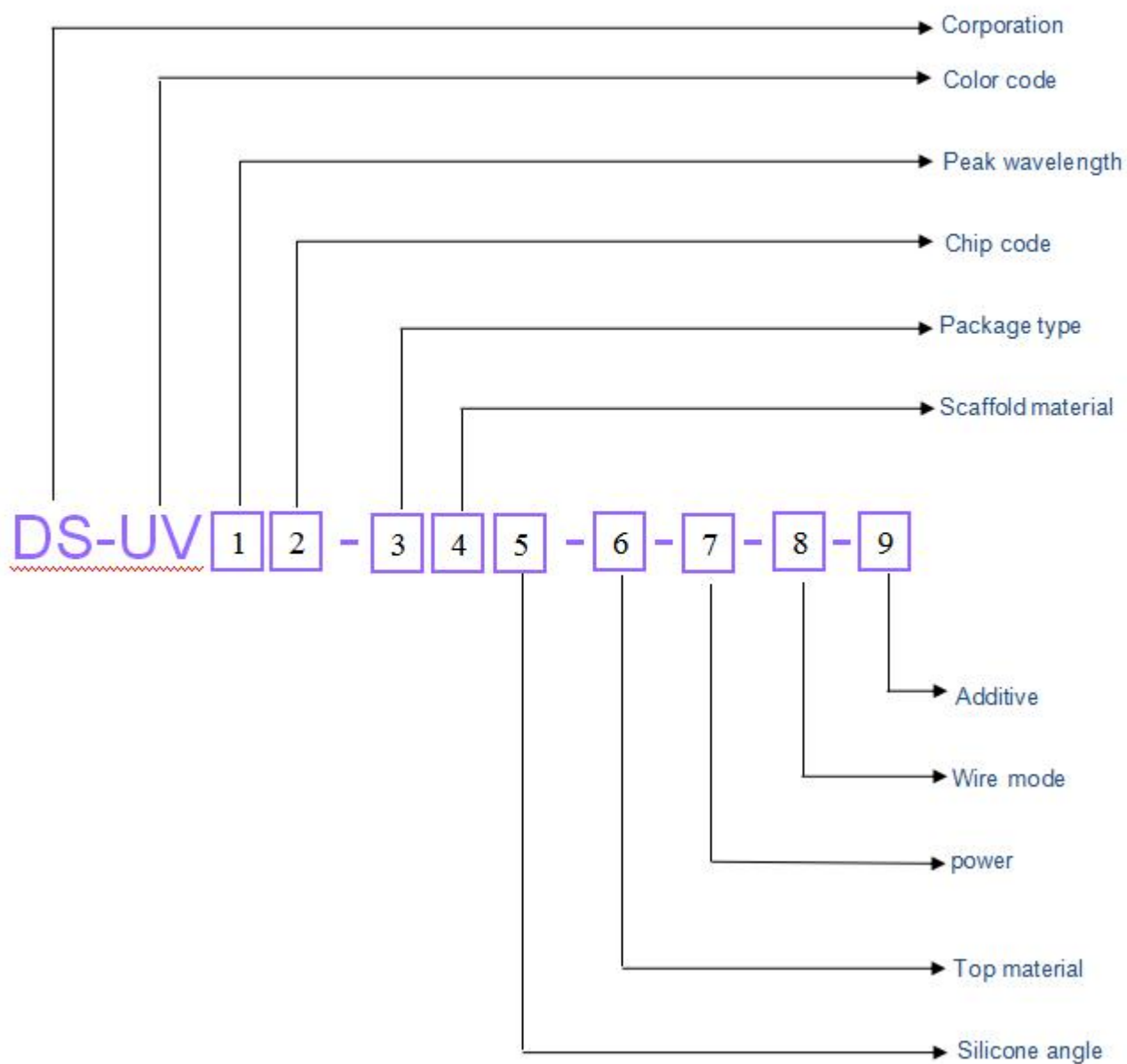
## Temperature Profile



| Profile Feature                                      | Lead Free Assembly |
|--|--------------------|
| Average Ramp-Up Rate ( $T_{s_{max.}}$ to $T_p$ )     | 3°C / second max.  |
| Preheat Temperature Min. ( $T_{s_{min.}}$ )          | 100°C              |
| Preheat Temperature Max. ( $T_{s_{max.}}$ )          | 150°C              |
| Preheat Time ( $t_{s_{min.}}$ to $t_{s_{max.}}$ )    | 60-120 seconds     |
| Time Maintained Above Temperature ( $T_L$ )          | 183°C              |
| Time Maintained Above Time ( $t_L$ )                 | 60-150 seconds     |
| Peak / Classification Temperature ( $T_p$ )          | 220°C              |
| Time Within 5°C of Actual Peak Temperature ( $t_p$ ) | 10-30 seconds      |
| Ramp – Down Rate                                     | 6°C / second max.  |
| Time 25°C to Peak Temperature                        | 6 minutes max.     |

Notes: 1. All temperature refer to the application Printed Circuit Board (PLCC), measured on the surface adjacent to the package body.

## Product Description



## ● Lens cleaning :

In the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solution can be applied to the lens surface

1. Try a gentle swabbing using a lint-free swab
2. If needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens surface
3. Do not use other solvents as they may directly react with the LED assembly
4. Do not use ultrasonic cleaning that the LED will be damaged

## ● Handling :

Care must be taken not to damage LED's silicon while exposing to high temperature or contact LED's epoxy resin with hard or sharp objects, such as metal hook, tweezer or sand blasting.

## ● Storage Conditions :

1、 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.

2、 After opening the package: The LED's floor life is 168hrs when environment is 30°C or less and 60%RH or less. The LED should be soldered within 168hrs (7days) after opening the package. If unused LEDs remain, it should be stored in moisture proof packages.

3、 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.

## ● ESD

Static electricity and high volt can damage led, The production whose Die material is InGaN must strictly required to prevent ESD, Must put on static glove and static fillet, Soldering tool and the cover of device must connect the ground, oldering condition follows the related stating of production specification manual.