# Data Sheet

| | | | | | |
|---|---|---|---|---|---|
| Customer Name： | | | | | |
| Customer NO： | | | | | |
| Product Name： | | | CL-SFC535DBW- 6.5K-02 | | |
| Product Type： | | | | | |
| Date Prepared： | | | | | |
| | | | | | |
| Development | Approved | Marketing Dept | Confirmed by | Approved | Purchasing Dept |
| **Judge outcome** | | | **Judge outcome** | | |

## Features

- Package Size：5.4(L) ×5.0(W) ×0.8(T)mm
- Silicone Packed
- Suitable for different working environment
- Super long lifetime：50000HRs
- Anti UV
- White colors are available in(2300K- 25000K)
- Wide viewing angle ( $2\theta 1/2 = 120°$ )

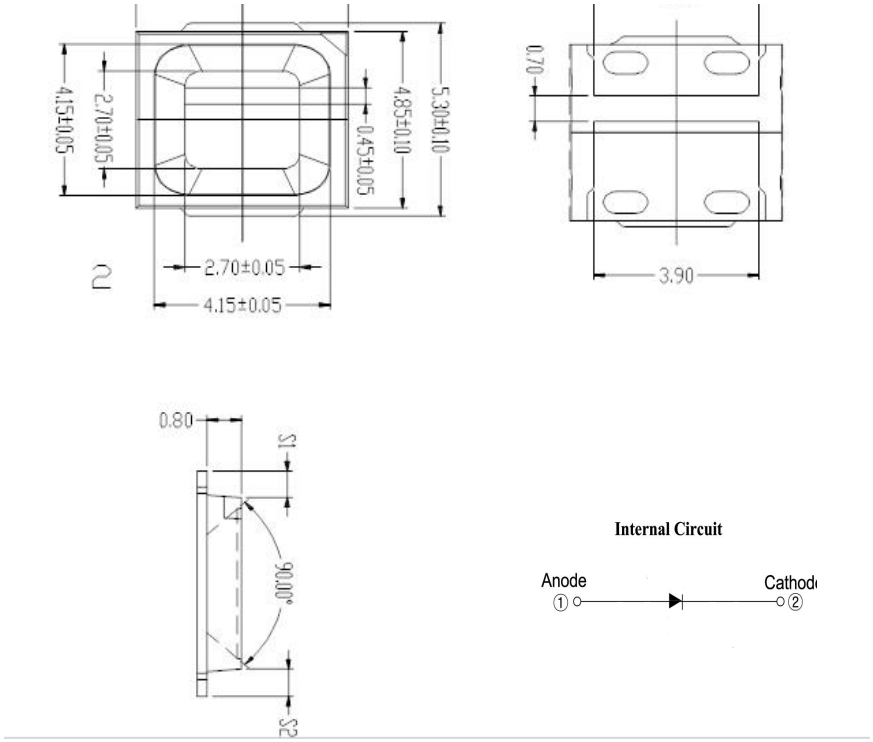
## Applications

- Indoor lighting: Fluorescent lamp, tube
- Commercial illumination and displays: Advertising words, light box
- LCD Backlighting
- Decorative lighting: light strip
- Automotive interior auxiliary lighting
- Other illumination and displays

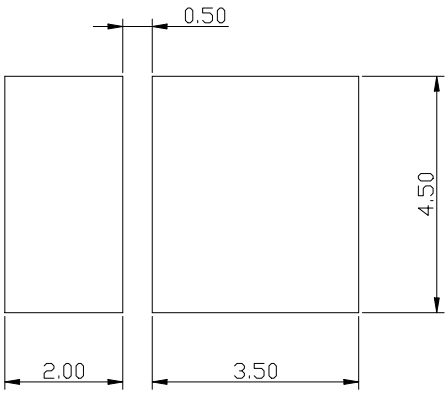
## Device Selection Guide

| ITEM | MATERIALS |
|---|---|
| Resin | Silicor |
| Bonding wire | 25 Em Au |
| Lens color | Water Clear |
| Dice | InGaN |

## Package Dimensions




## Recommended Soldering Patter




NOTES：

1、All dimensions are in millimeters (inches)；

2、 Tolerances are 0.2mm (0.008inch) unless otherwise noted

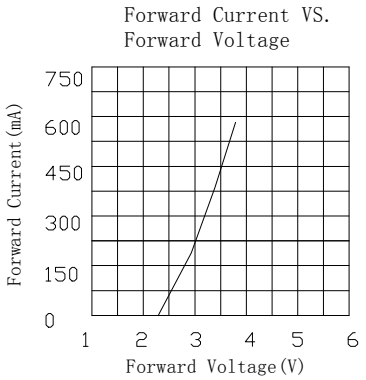
## Absolute maximum ratings （Ta=25°C）

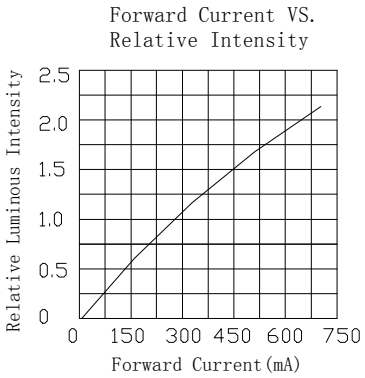
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Forward current | If | 350 | mA |
| Reverse voltage | Vr | 5 | V |
| Power dissipation | Pd | 1500 | mW |
| Operating temperature range | Top | -25~+80 | °C |
| Storage temperature range | Tstg | -30~+85 | °C |
| Peak pulsing current （1/8 duty f=1KHz） | Ifp | 450 | mA |
| Junction Temperature | Tj | 115 | ℃/W |
| Electrostatic Discharge(HBM) | ESD | 1000 | V |

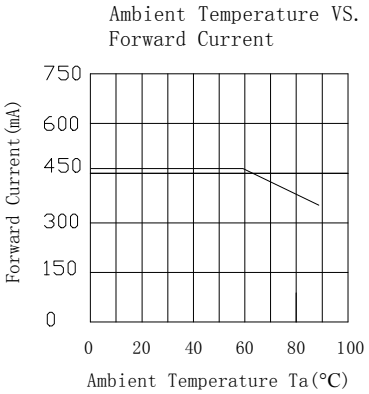
## Electro-Optical characteristics (TA=25°C)

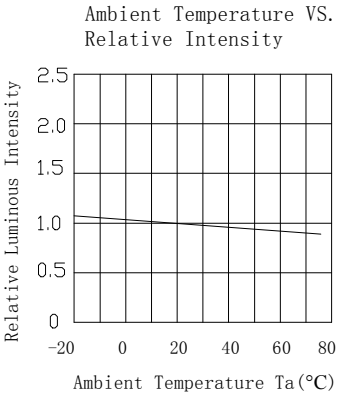
| Parameter | Test Condition | Symbo l | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min | Typ | Max | |
| ColorTemperature | If=350mA | CCT | AW | 6000 | --- | 7000 | K |
| Forward voltage | If=350mA | Vf | AW | 3.0 | --- | 3.4 | V |
| luminous flux | If=350mA | φ | AW | 110 | --- | 130 | LM |
| Viewing angle at 50% IV | If=350mA | 2θ1/2 | AW | -- | 120 | -- | Deg |
| Dominant wavelength | If=350mA | λd | -- | -- | -- | -- | nm |
| Reverse current | Vr=5V | Ir | AW | -- | 5 | -- | μA |
| Color Rendering Index | If=350mA | CRI | -- | -- | 80 | -- | Ra |

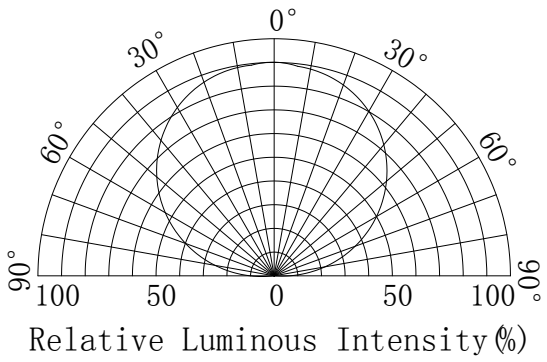
## Typical photoelectricity characteristic curve chart



## Test items and results of reliability

| Type | Test item | Standard | Test Conditions | Note | Quantity | Number of Damaged |
|---|---|---|---|---|---|---|
| Environmental Sequence | Temperature Cycle | JIS C 7021 (1977)A-4 | -25°C 30min ↑↓5min 80°C 30min | 100 cycle | 22 | 0 |
| | Thermal Shock | MIL-SLD-107D | -25°C 15min ↑↓5min 80°C 15min | 100 cycle | 22 | 0 |
| | High Humidity Heat Cycle | JIS C 7021 (1977)A-5 | 30°C 〈=〉 65°C 90%RH 24hrs/1cycle | 10 cycle | 22 | 0 |
| | High Temperature Storage | JIS C 7021 (1977)B-10 | $T_a$=80°C | 1000hrs | 22 | 0 |
| | Humidity Heat Storage | JIS C 7021 (1977)B-11 | $T_a$=60°C RH=90% | 1000hrs | 22 | 0 |
| | Low Temperature Storage | JIS C 7021 (1977)B-12 | $T_a$=－30°C | 1000hrs | 22 | 0 |
| Operation Sequence | Life Test | JIS C 7035 (1985) | $T_a$=25°C $I_F$=450mA | 1000hrs | 22 | 0 |
| | High Humidity Heat Life Test | ∩ | 60°C RH=90% $I_F$=450mA | 500hrs | 22 | 0 |
| | Low Temperature Life Test | ∩ | Ta=-25°C $I_F$=450mA | 1000hrs | 22 | 0 |

**Refer to reliability test standard specification for in this line.**

### Criteria For Judging Damage

| Parameter | Symbol | Units | |
|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$=$I_{FT}$ | Initial Data±10% |
| Reverse Current | $I_R$ | $V_R$=5V | $I_R$ ≦ 10μA |
| Luminous Intensity | $I_V$ | $I_F$=$I_{FT}$ | Average $I_V$ degradation ≦ 30%<br>Single LED $I_V$ degradation ≦ 50% |
| Resistance to Soldering Heat | -- | -- | Meterial without internal cracks, no material between stripped, no deaded light. |

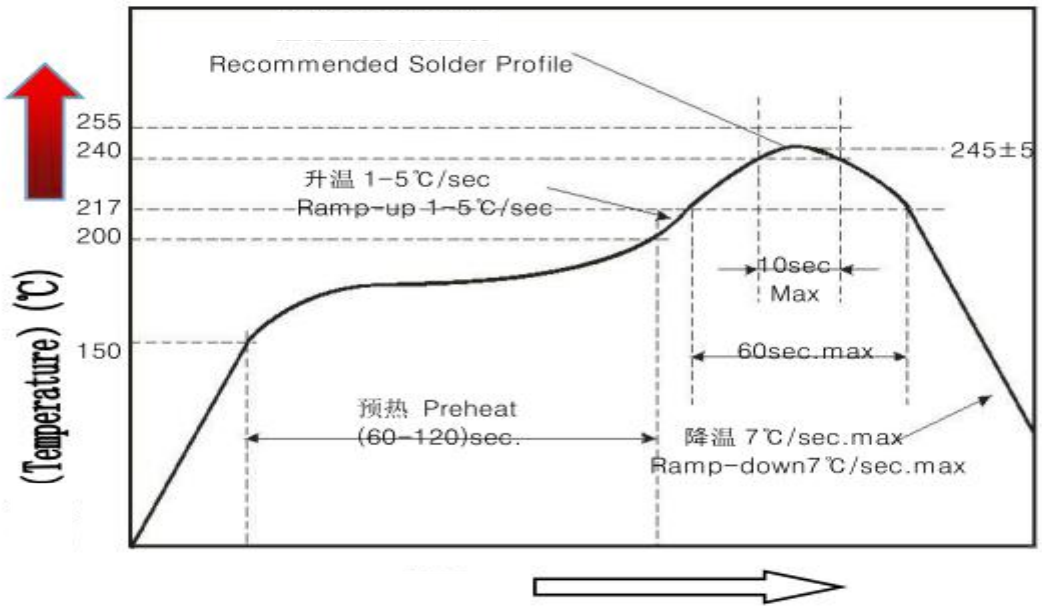
**Useful hint：**

**1、Hand Soldering**

**A soldering iron of less than 20W is recommended to be used in Hand Soldering.Please keepthe temperature fo the soldering iron under 360℃ while soldering.Each terminal fo the LED is to go for less than 3 second and for one time only.**

**Be careful because the damage of the product is often started at the time of the hand soldering.**

**2. Reflow Soldering:Use the conditions shown in the under Figure of Pb-Free Reflow Soldering**




- **Reflow soldering only allowed to do once**
- **Stress on the LEDs should be avoided during heating in soldering process**
- **After soldering,do not deal with the product before its temperature drop down to room Temperature.**

**Precautions(1)**

**1. Storage**

**●Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to aminimum.**
**●Before opening the package, the product should be kept at 30℃ or less and humidity less than 60% RH, and beused within a year.**
**●After opening the package, the product should be stored at 30℃ or less and humidity less than 10%RH, and besoldered within 24 hours (1day). It is recommended that the product be operated at the workshop condition of 30℃ or less and humidity less than 60%RH.**
**●If the moisture absorbent material has fade away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition: (70±5)℃ for 24 hours.**

**2. Static Electricity**

**Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristic such as the forward voltage becomes lower, or the LEDs do not light at the low current. even not light.**
**All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.**

**Precautions (2)**

**3. Vulcanization**

**LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag 2S in the process . It will lead to the capacity of reflecting of silver layer reducing , light color temperature drift and serious decline , seriously affecting the performance of the product. So we should take corresponding measures to avioding vulcanization , such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material.**

**4. Safety Advice For Human Eyes**

**LED Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity will cause great hazard to human eyes. Please be careful.**