# Data Sheet

Customer: _____

Part No: CL-SFC515BIRR-850-02

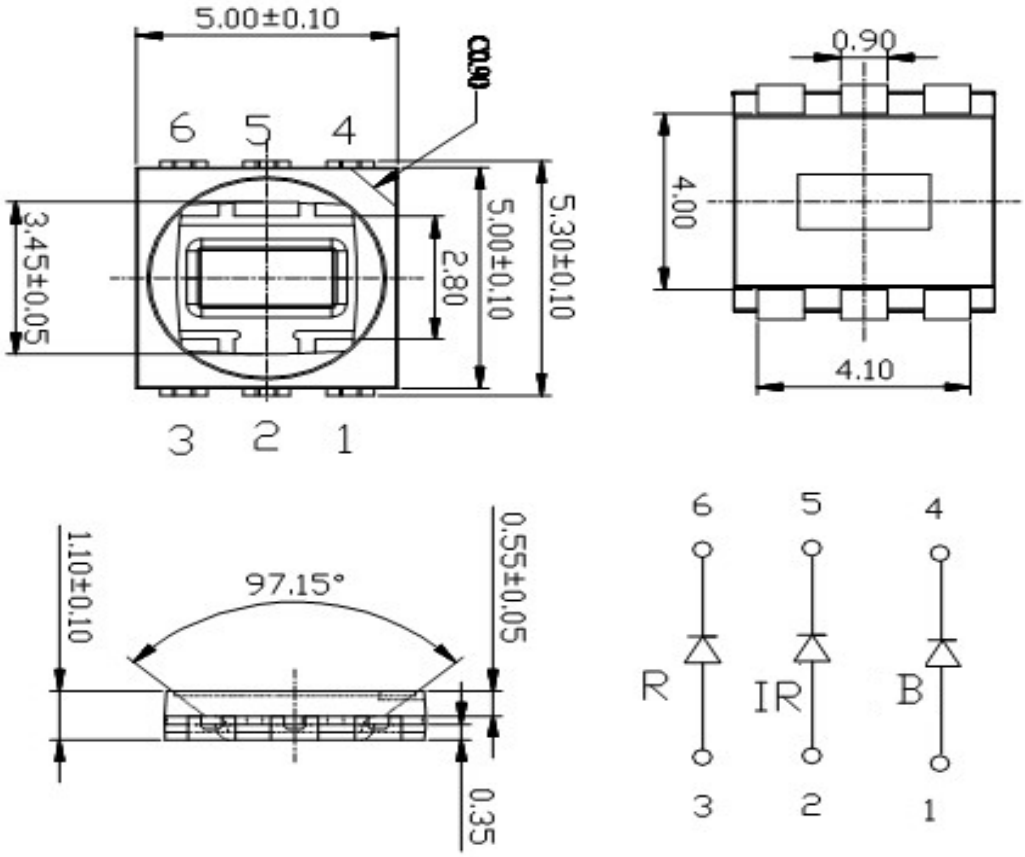
Sample No: _____

Description: 5050 BLUE/IR-850/RED

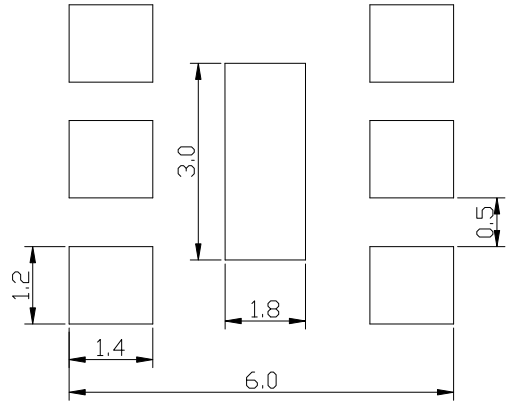
Item No: _____

| Customer | | | |
|---|---|---|---|
| Check | Inspection | Approval | Date |
| | | | |

## Package Dimensions




## Recommended Soldering Pattern




（NOTES）：

1. All dimensions are in millimeters
2. Tolerances are ±0.1mm unless otherwise note.

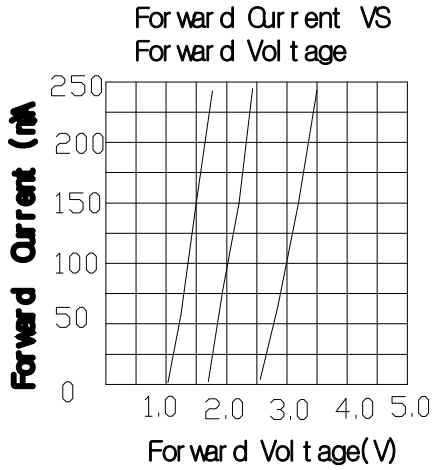
## Absolute maximum ratings （Ta=25°C）

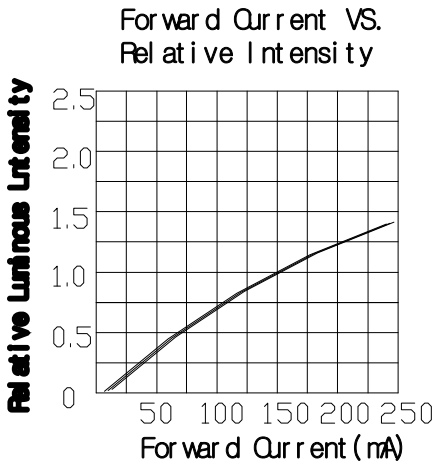
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Forward current | If | 150 | mA |
| Reverse voltage | Vr | 5 | V |
| Power dissipation | Pd | 492 | mW |
| Operating temperature range | Top | -25~+80 | °C |
| Storage temperature range | Tstg | -30~+85 | °C |
| Peak pulsing current（1/8 duty f=1KHz） | Ifp | 250 | mA |
| Junction Temperature | Tj | 115 | °C |
| Electrostatic Discharge(HBM) | ESD | 2000 | V |

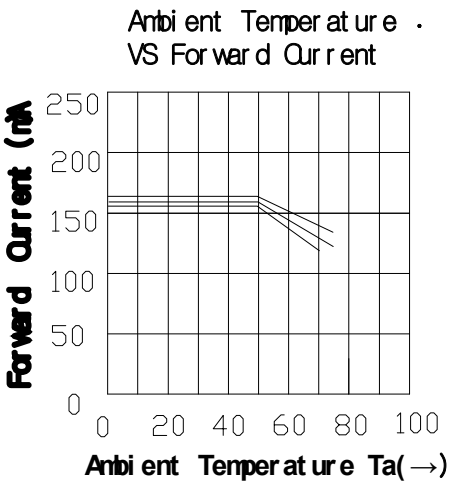
## Electro-Optical characteristics (TA=25°C)

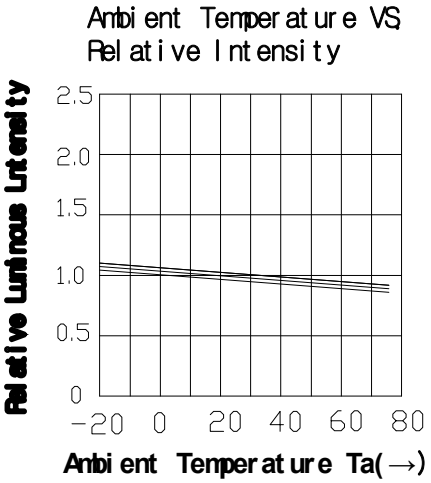
| Parameter | Test Condition | Symbol | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min | Typ | Max | |
| Color Temperature | $I_F$=150mA | CCT | -- | -- | -- | -- | K |
| Forward voltage | $I_F$=150mA | Vf | R<br>B<br>IR | 2.0<br>3.0<br>1.3 | -- | 2.4<br>3.4<br>1.6 | V |
| luminous flux | $I_F$=150mA | φ | R<br>B<br>IR | 15<br>8<br>2 | -- | 20<br>12<br>6 | Lm<br>Lm<br>Mw |
| Viewing angle at 50% IV | $I_F$=150mA | 2θ1/2 | R<br>B<br>IR | -- | 120 | -- | Deg |
| Dominant wavelength | $I_F$=150mA | λd | R<br>B<br>IR | 620<br>460<br>-- | --<br>--<br>850 | 625<br>470<br>-- | nm |
| Reverse current | Vr=5V | Ir | R<br>B<br>IR | -- | 5 | -- | μA |
| Color Rendering Index | $I_F$=150mA | CRI | -- | -- | -- | -- | Ra |

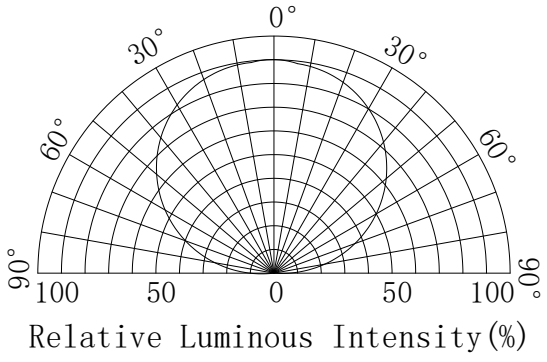
## Typical photo-electricity characteristic curve chart



## 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 | 50 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 $I_F$=150mA | 1000hrs | 22 | 0 |
| | High Humidity Heat Life Test | * | 60°C RH=90% $I_F$=150mA | 500hrs | 22 | 0 |
| | Low Temperature Life Test | * | Ta=-25°C $I_F$=150mA | 1000hrs | 22 | 0 |

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

### Criteria For Judging Damage

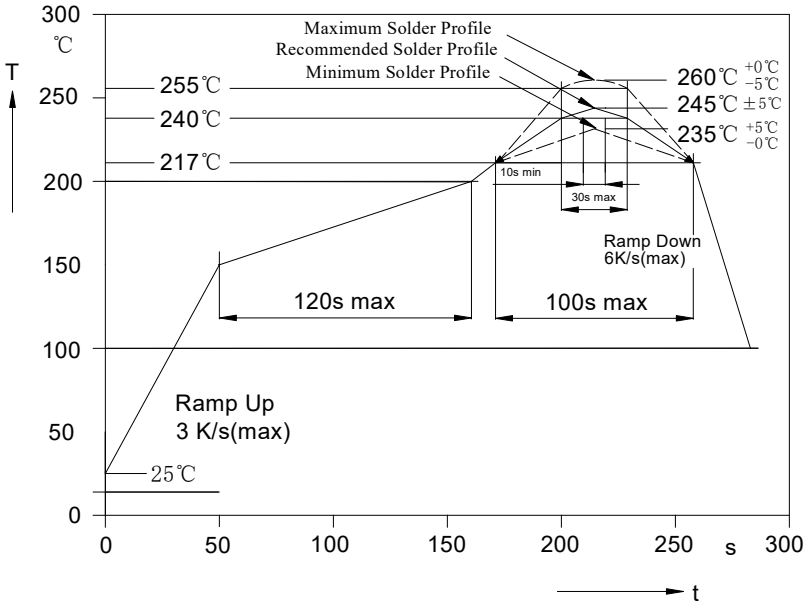
| Test item | Symbol | Test Conditions | Standard |
|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$=$I_{FT}$ | Initial Data±10% |
| Reverse Current | $I_R$ | $V_R$=5V | $I_R$≦10μA |
| Luminous Intensity | $I_V$ | $I_F$=$I_{FT}$ | Average $I_V$ degradation≦30%<br>Single LED $I_V$ degradation≦50% |
| Resistance to Soldering Heat | -- | -- | 材料无内部裂痕、无材料间爆裂、剥离、无死灯<br>Meterial without internal cracks, no material between stripped, no deaded light. |

*The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

## Guideline for Soldering

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

SMD-Reflow Soldering Profile for lead free soldering( Acc.to J-STD-020B)




**Remark:** If not lead free soldering, the recommended solder profile is 230℃and max solder profile is 245℃.

### 1、 Hand Soldering

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

2)、

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

### 2、 Cleaning

1)、

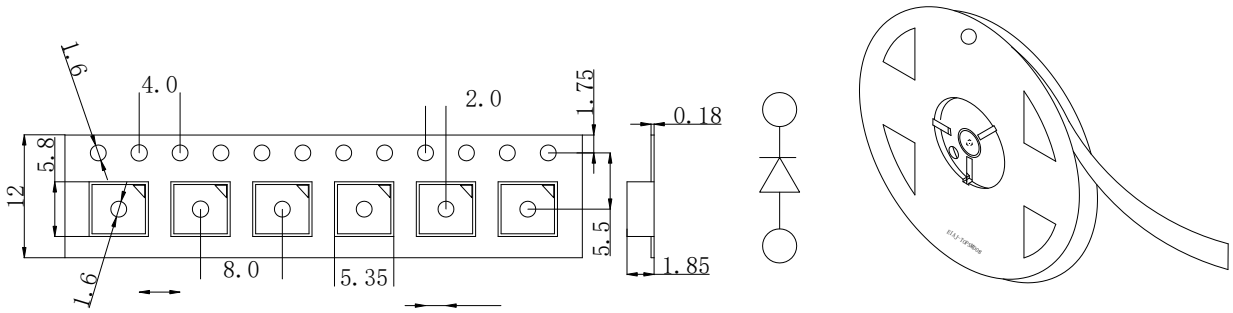
It is recommended that alcohol be used as a solvent for cleaning after soldering. Cleaning is to go under 30℃ for 3 minutes or 50℃ for 30 seconds. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

2)、

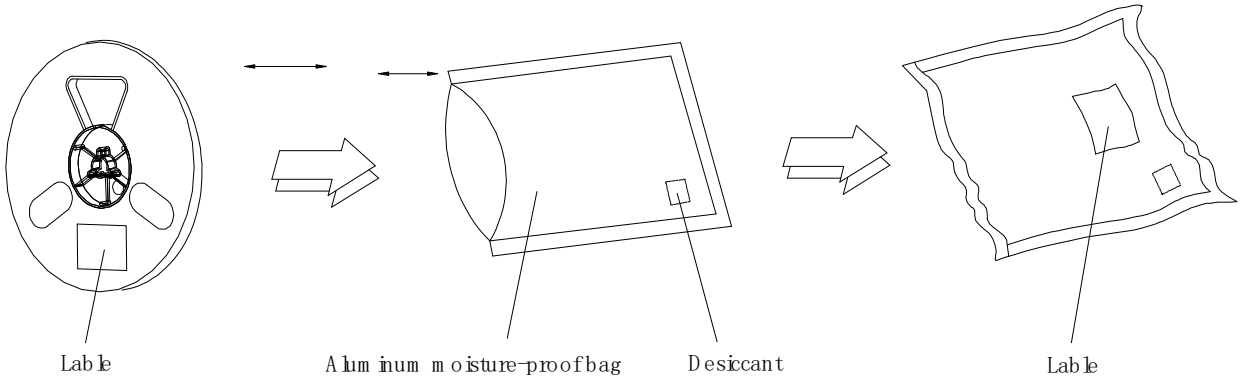
Ultrasonic cleaning is also an effective way for cleaning. But the influence of Ultrasonic cleaning on LED depends on factors such an ultrasonic power. Generally, the ultrasonic power should not be higher than 300W.Before cleaning, a pre-test should be done to confirm whether any damage to LEDs will occur.

# Tape and Packaging

## 1、 Tape leader and reel



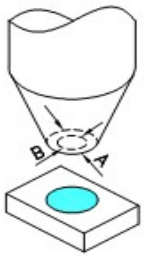

## 2、 Moisture Resistant Packaging




## 3、 Cautions

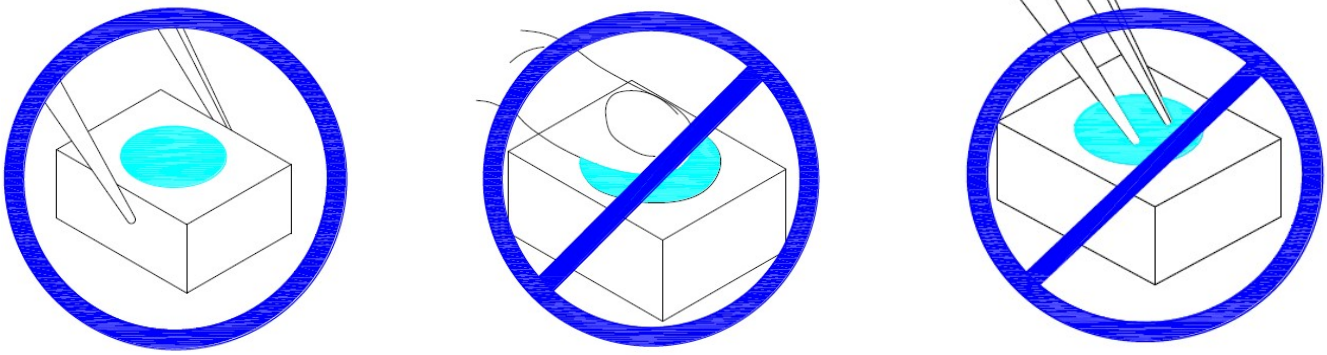
1)、
The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper.

2)、
The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.



# Handling Precautions

1、
Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the
silicone lens surface, it may damage the internal circuitry.



2.Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal Circuitry.

3.Not suitable to operate in acidic envi-ronment, PH<7