

# Technical Data Sheet

Customer Part No.:

Inhere Part No.: S3535BPET-004

Part Name: 3535 红光 LED

Spec Issue Date: 2021-04-09

Revision No.: A/0

To Customer:

We submit herewith the following information for your approval:

- ☒ Sample      ☐ OQC Inspection Record      ☒ LED Dimension  
☒ Electrical Characteristics Curve      ☒ Internal Circuit Diagram  
☒ Soldering recommendation

Prepared by : Lily  
Date : 2021-04-09

Checked by : Tom  
Date : 2021-04-09

Approved by : Evan  
Date : 2021-04-09

Customer Opinion

- ☐ Approve and no objection  
☐ Reject with the following reason:

**inhere**   
light for your mind  
银河光电

东莞市银河光电有限公司

Dongguan Inhere Opto Co.,Ltd.

地址:东莞市莞城科技园 D 幢

ADD: Building D, Guancheng Science & Technology Park,Dongguan

TEL: 0769-23320868 FAX: 0769-23320878

E-mail: bill@inhereopto.com

Http://www.inhereopto.com

## Features

3.50mm×3.55mm LED, 0.70mm thickness

Low power consumption

Wide view angle

Package: 4000pcs/reel

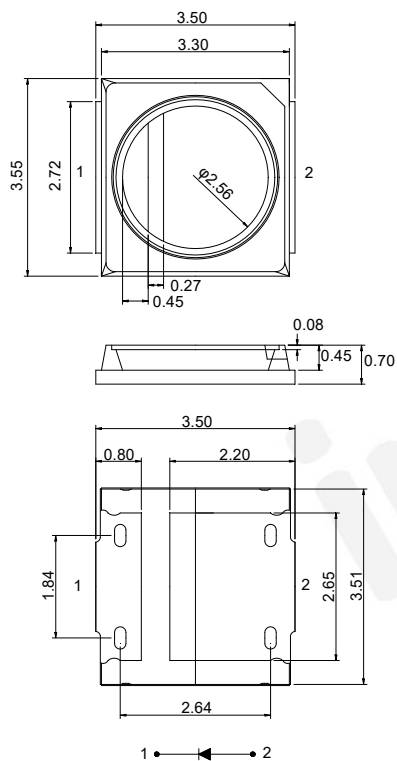
RoHS Compliant

## Applications

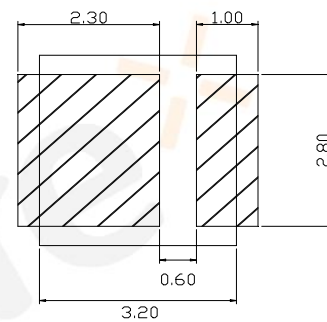
Ideal for back light and indicator

Various colors and lens types available

## Package Outlines



## Recommend Pad Layout



Part No.	Emitted color	Dice	Lens color
S3535BPET-004	Red	AlGaInP	Water Clear

### Notes:

All dimensions are in millimeters (inches).

Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

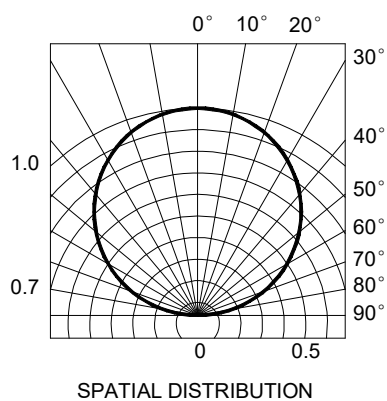
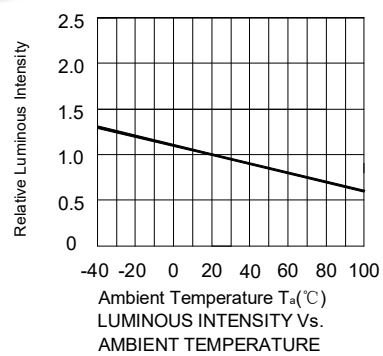
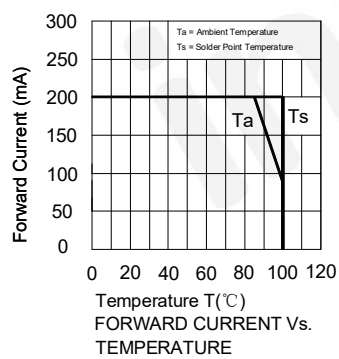
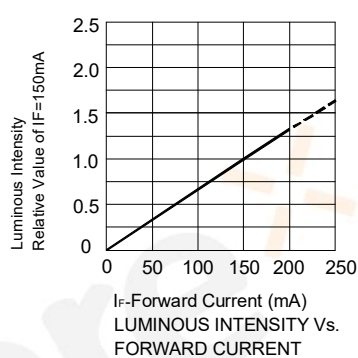
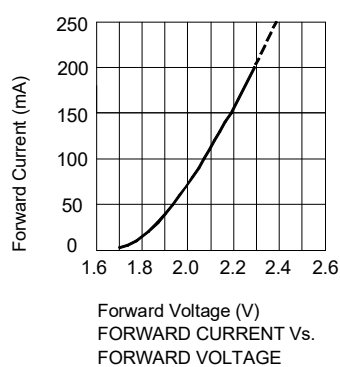
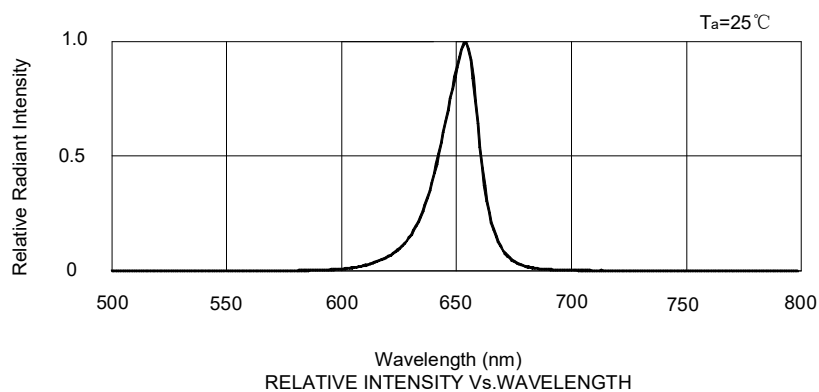
**Absolute Maximum Ratings (Ta=25℃)**

Parameter	Symbol	Value	Unit
Forward current	If	200	mA
Peak pulsing current (1/10 duty f=1kHz)	Ifp	300	mA
Power dissipation	Pd	520	mW
ESD (HBM,R=100KΩ,C=100pF)	--	2	kV
Reverse voltage	Vr	5	V
Operating temperature	Top	-40 ~+100	℃
Storage temperature	Tstg	-40 ~+100	℃
Humidity sensitive level	MSL	3	--

**Electro-Optical Characteristics (Ta=25℃)**

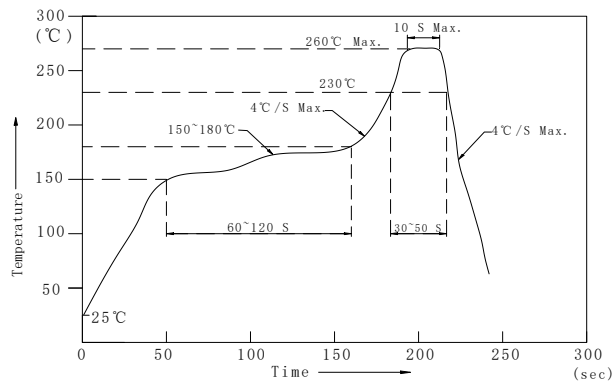
Parameter	Test Condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Peak wavelength	If=150mA	$\lambda_p$	650	--	665	nm
Spectral half bandwidth	If=150mA	$\Delta\lambda$	--	20	--	nm
Forward voltage	If=150mA	Vf	1.8	--	2.6	V
Luminous flux	If=150mA	$\Phi$	8	14	--	lm
Viewing angle	If=150mA	2 $\theta$ 1/2	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	$\mu$ A

## Optical Characteristic Curves



## Reflow Profile

### ■ Reflow Temp/Time



#### Notes:

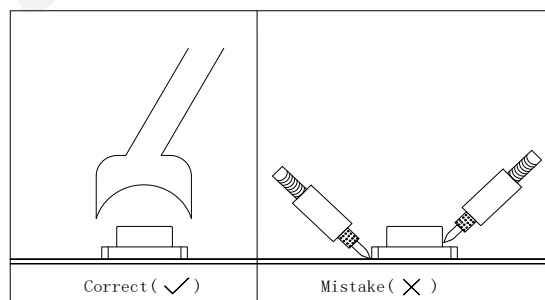
1. We recommend the reflow temperature 245°C ( $\pm 5^\circ\text{C}$ ). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $320^\circ\text{C}$  ( $\pm 20^\circ\text{C}$ ). If temperature is higher, time should be shorter ( $+10^\circ\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under  $350^\circ\text{C}$ .

### ■ Rework

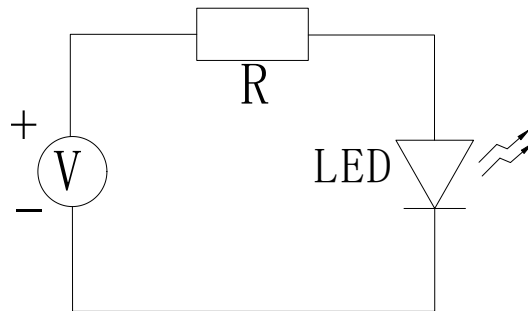
1. Customer must finish rework within 5 sec under  $340^\circ\text{C}$ .
2. The head of iron cannot touch copper foil.
3. Twin-head type is preferred.



- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

## Test Circuit and Handling Precautions

### ■ Test circuit



### ■ Handling precautions

#### 1. Over-current-proof

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

#### 2. Storage

##### 2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature: 5°C~30°C

2.2 Shelf life in sealed bag: 12 month at <5°C~30°C and <30% R.H. after the package is opened, the products should be used within 168hrs or they should be keeping to stored at  $\leq 20$  R.H. with zip-lock sealed.

#### 3. Baking

It is recommended to baking before soldering when the pack is unsealed after 168hrs.

The Condition is: 65±5°C/24hrs.

## Test Items and Results of Reliability

Test Item	Test Conditions	Standard Test Method	Note	Number of Test
Reflow Soldering	Ta=260±5℃,Time=10±2S	JB/T 10845-2008	3times	0/22
Temperature Cycling	-40±5℃ 30±1min ↑→(25℃/5±1min)↓ 100±5℃ 30±1min	GB/T 2423.22-2012	100cycles	0/22
Thermal Shock	Ta=-40±5℃~100±5℃, 15±1min dwell	GB/T 2423.22-2012	100cycles	0/22
High Humidity High Temp. Cycling	Ta=30±5℃~65±5℃, 90±5%RH,24hrs/1cycle	GB/T 2423.4-2008	10cycles	0/22
High Humidity High Temp. Storage Life	Ta=85±5℃,ψ(%)=85±5%RH	GB/T 2423.3-2006	1000hrs	0/22
High Temperature Storage Life	Ta=100±5℃,non-operating	GB/T 2423.2-2008	1000hrs	0/22
Low Temperature Storage Life	Ta=-40±5℃,non-operating	GB/T 2423.1-2008	1000hrs	0/22
Life Test	Ta=26±5℃,@150mA, ψ(%)=25%RH~55%RH	--	1000hrs	0/22
High Humidity High Temp. Operating Life	Ta=85±5℃, ψ(%)=85%RH	GB/T 2423.3-2006	500hrs	0/22
Low Temperature Operating Life	Ta=-20±5℃	GB/T 2423.1-2008	1000hrs	0/22

**Forward Voltage Rank Combination (IF=150mA)**

Rank	Min.	Max.	Unit
12	1.8	2.0	V
14	2.0	2.2	
16	2.2	2.4	
18	2.4	2.6	

**Luminous Flux Rank Combination (IF=150mA)**

Rank	Min.	Max.	Unit
L8	8	14	lm
L14	14	20	
L20	20	--	

**Peak Wavelength Rank Combination (IF=150mA)**

Rank	Min.	Max.	Unit
R1	650	665	nm

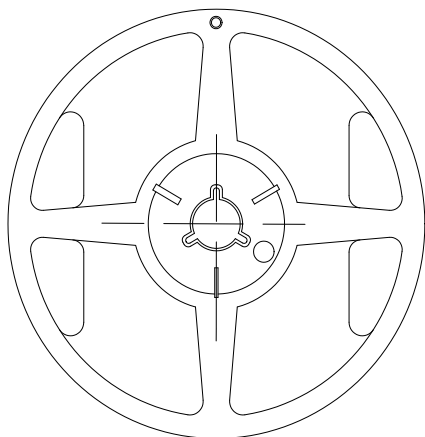
**Notes:**

1. The tolerance of forward voltage is  $\pm 0.05V$ .
2. The tolerance of luminous flux ( $\Phi$ ) is  $\pm 15\%$ .
3. The tolerance of wavelength is  $\pm 1nm$ .
4. This specification is preliminary.
5. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

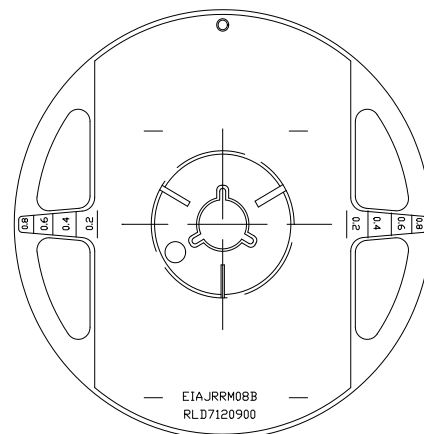
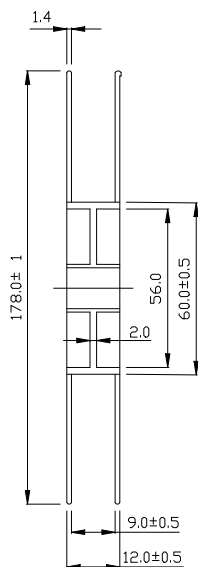


## 3535 Series SMD Top LED Lamps Packaging Specifications

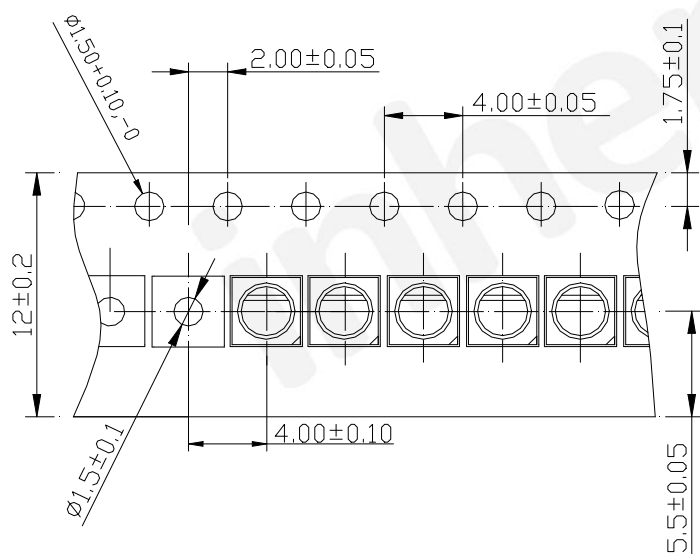
### ● Feeding Direction



### ● Dimensions of Reel (Unit: mm)



### ● Dimensions of Tape (Unit: mm)

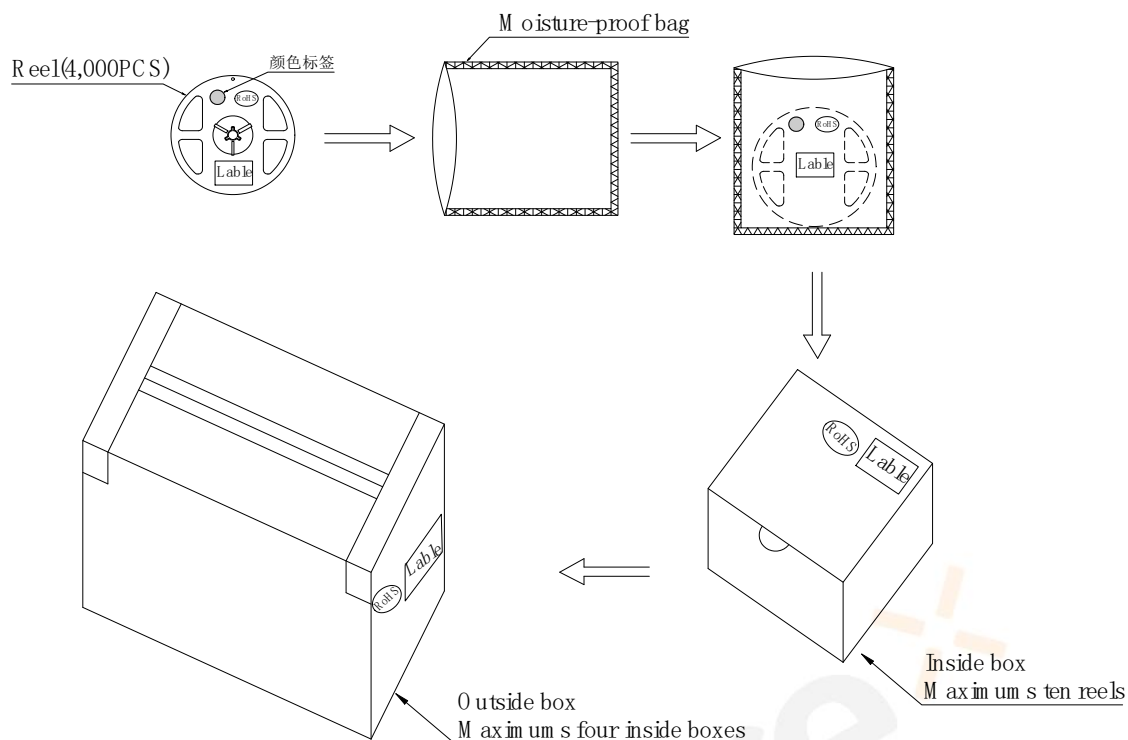


### Notes:

1. Empty component pockets are sealed with top cover tape.
2. The maximum number of missing lamps is two.
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 4,000pcs/Reel.

## 3535 Series SMD Top LED Lamps Packaging Specifications

### ● Packaging specifications



#### Notes:

Reeled products (numbers of products are 4,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, ten moisture-proof bag of maximums (total maximum number of products are 40,000pcs) packed in an inside box (about size: 240x 230x 130mm) and four inside boxes of maximums are put in the outside box (about size: 545mm x 260mm x 250mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.