

# SPECIFICATION

REFOND P/N

RF-\*\*QI32DS-DF-N

R&D

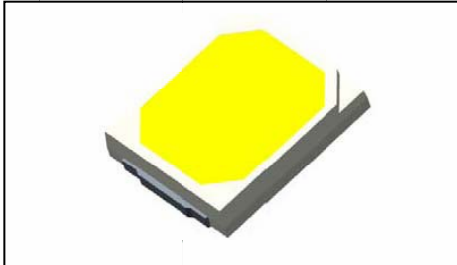
Mass Product

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## 1. Description

### 1.1 General Description



The White LED which was fabricated using a blue chip and phosphor

Product Package: 2.8mm X 3.5mm X 0.7mm.

LED

2.8mm X 3.5mm X 0.7mm

### 1.2 Features

PLCC-2 Package.

Extremely wide viewing angle.

Suitable for all SMT assembly and solder process.

SMT

Available on tape and reel.

Moisture sensitivity level: Level 3.

Level 3

RoHS compliant. RoHS

### 1.3 Application

Indoor lighting.

Bulb lighting.

General indoor applications.

## 1.4 Package Dimensions

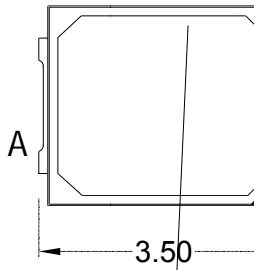


Fig.1-1 Top view

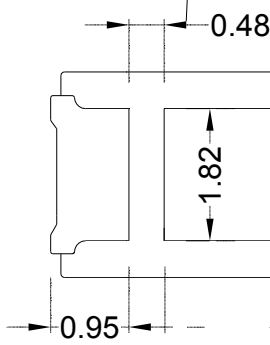


Fig.1-3 Bottom view

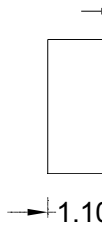


Fig.1-5 Soldering patterns

### Notes

1. All dimensions units are mm
2. All dimensions tolerance are ±0.05

## 1.5 Product Parameters

Table 1-1 Ele

Item
Forward Voltage
Reverse Current
RF-27QI32DS-DF-N 2580-2880K
RF-W57QI32DS-DF-N 5270-6090K
Viewing Angle
Color Rendering Index
Thermal Resistance.
Electrostatic Discharge(HBM)

Ti

Parameter
Power Dissipation
Forward Current
Peak Forward Current
Reverse Voltage
Operating Temperature
Storage Temperature
Junction Temperature

Not

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7. W

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## 1.6 Bin Range Of Forward Voltage and Luminous Flux

BIN

Table 1-3

VF(V)	G1	G2	H1
	2.8-2.9	2.9-3.0	3.0-3.1
(LM)	PED	QED	QGD
	18-20	20-22	22-24

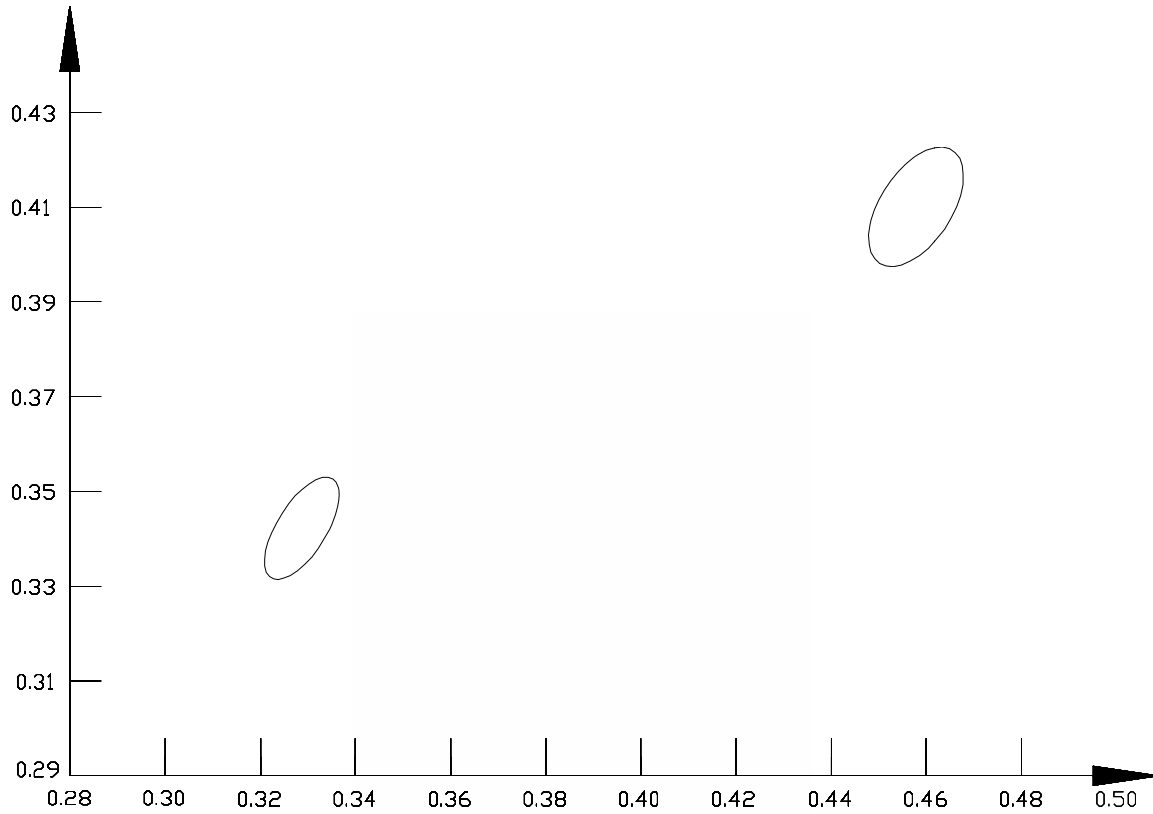


Fig 1-6 The C.I.E Chromaticity Diagram CIE

Table 1-4

BINCODE	Center (x,y)		a	b	
	X	Y			
A27	0.4578	0.4101	0.0129	0.0069	57.17
A57	0.3287	0.3422	0.0112	0.0048	58.14

## 1.7 Typical optical character



Fig 1-7Fon

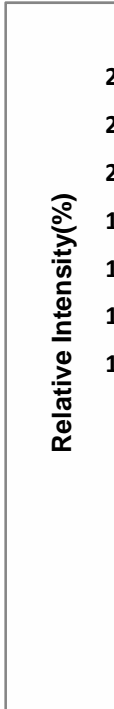


Fig 1-8 Forward Cu



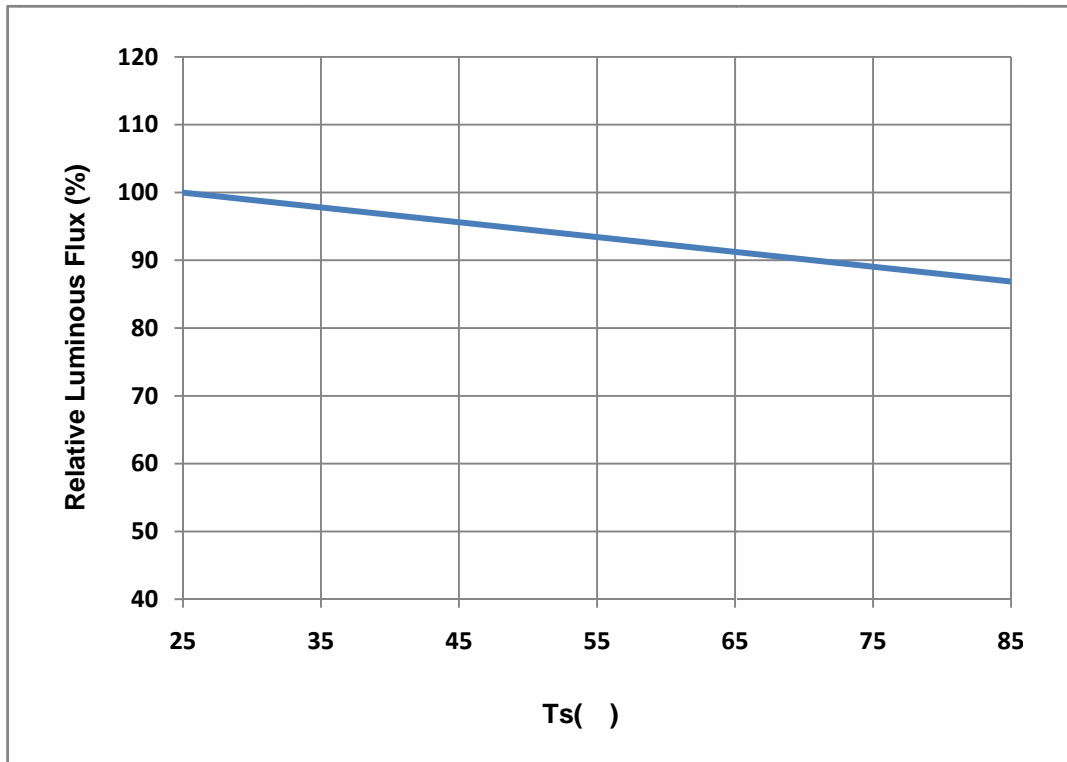


Fig 1-9 Solder Temperature Vs Relative Intensity

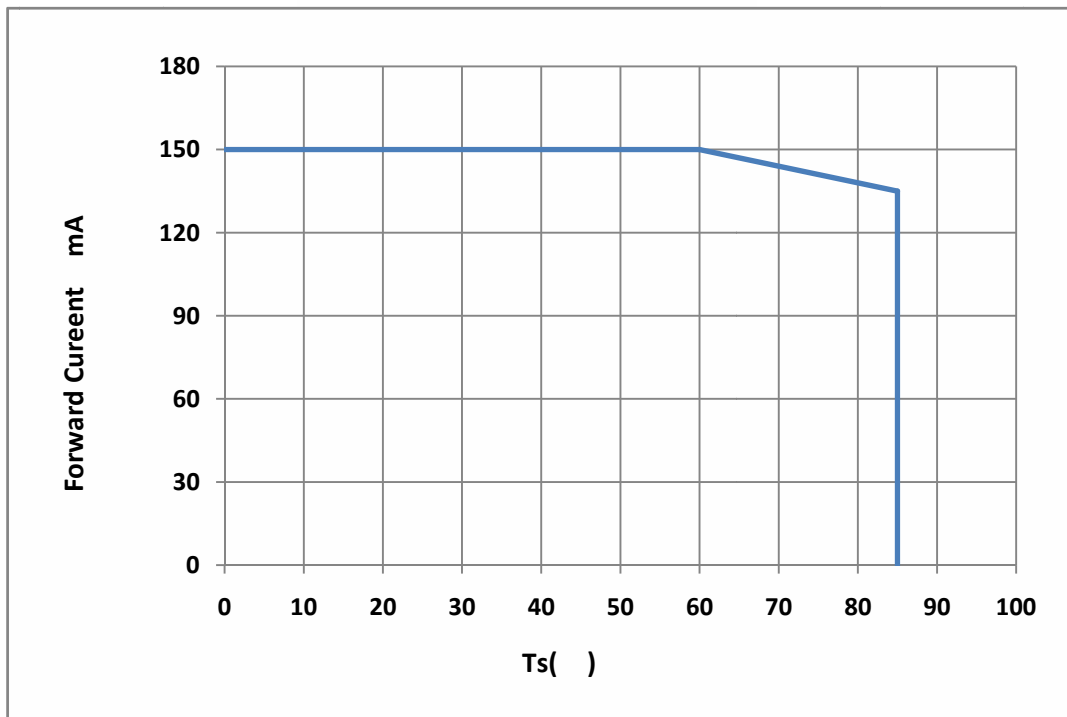


Fig 1-10 Solder Temperature Vs. Forward Current

Tj 115

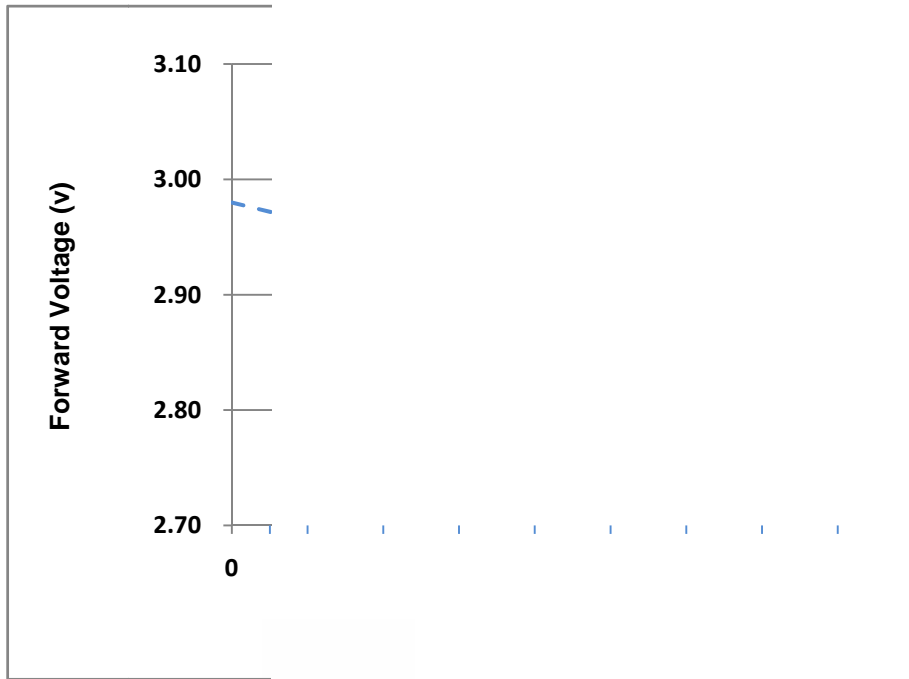


Fig 1-11 Forward Voltage Vs S

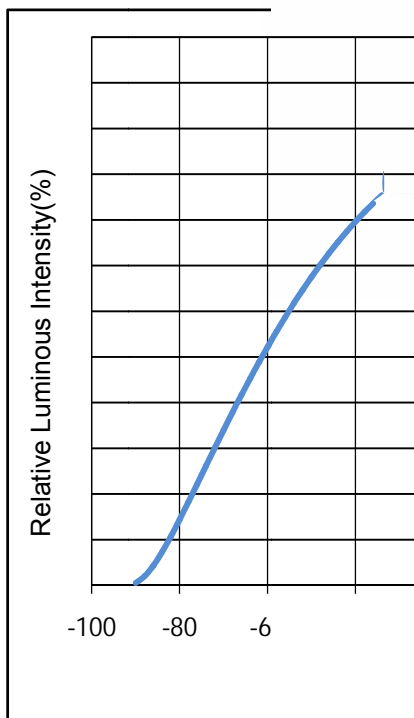


Fig 1-12 Radiance



## 2. Packaging

### 2.1 Packaging Specification

Package: 12000/4000pcs/reel. 12000/4000pcs

#### 2.1.1 Carrier Tape Dimension

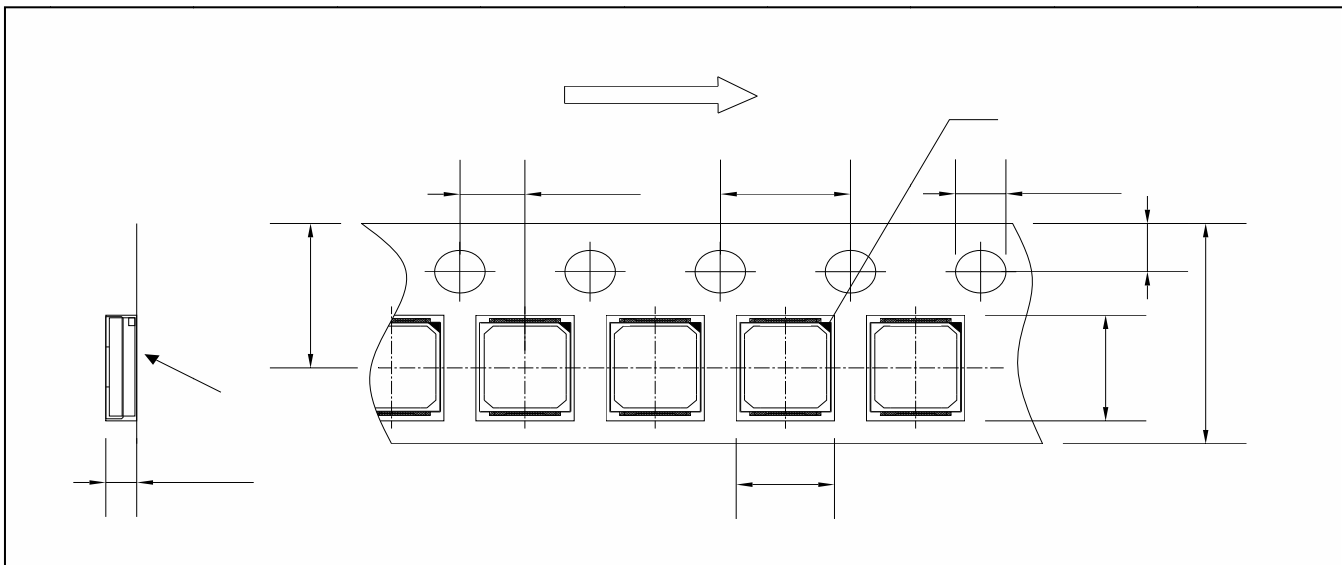


Fig.2-1 Carrier Tape Dimension

#### 2.1.2 Reel Dimension

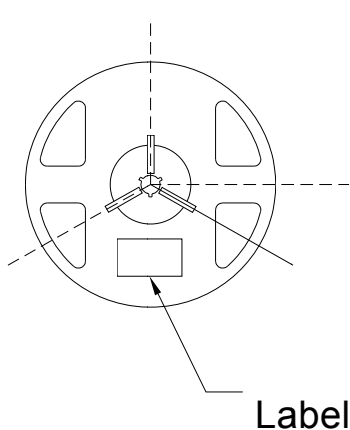


Fig.2-2Title

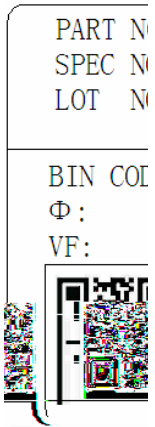
Table 2-1 Title

A	8.7± 0.3mm	A	8.5± 0.3mm
B	290± 2.0mm	B	178± 1.0mm
C	79.6± 0.2mm	C	59± 1.0r
D	14.2± 0.2mm	D	13.5± 0.3i
12K		4K	

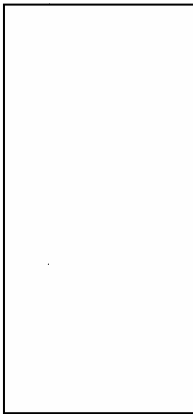
#### Notes

The tolerances unless mentioned  $\pm 0.1$ mm. Unit : mm 注：未注公差为 $\pm 0.1$ 毫米 尺寸单位：毫米

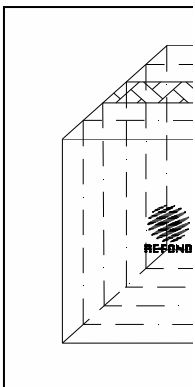
### 2.1.3 Label Fo



### 2.2 Moisture



### 2.3 Cardboard



## 2.4 Reliability Test Items And Cond

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TestItems	Ref.Standard
Reflow	JESD22-B106
Thermal Shock	JEITAED-4701 300307
High Temperature Storage	JEITAED-4701 200201
Low Temperature Storage	JEI
Life Test	JEI
High Temperature High Humidity Life Test	JEI
Temperature Humidity Storage	JEI



### 3. SMT Reflow Soldering Instructions SMT

#### 3.1 SMT Reflow Soldering Instructions SMT

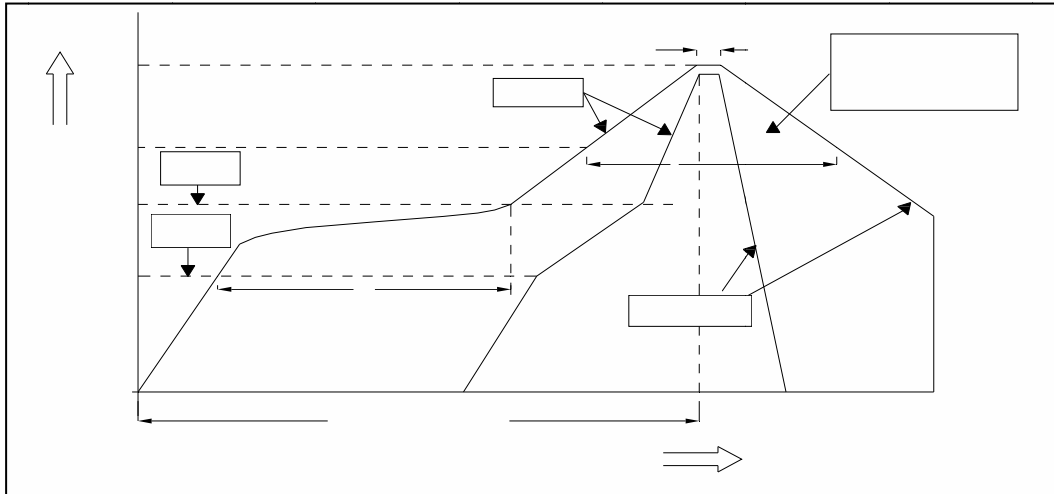


Fig.3-1Title

Table 3-1Title

Average temperature rise speed	$T_{smax}$ $T_P$	3 °C/ s	Max 3 °C/ s
Preheating: minimum temperature	( $T_{smin}$ )	150 °C	
Preheating: Max temperature	( $T_{smax}$ )	200 °C	
Preheating: Time	$T_{smin}$ $T_{smax}$	60 - 120	60s-120s
Time limited to maintain high temperature: the temperature ( $T_L$ )		217 °C	
Time limited to maintain high temperature: The Time ( $t_L$ )		60	Max 60s
Peak /Classification of temperature:	/ ( $T_P$ )	260 °C	
Time limit classification of peak temperature time $t_p$		10	Max 10s
Hold time within 5 °C with the actual peak temperature ( $T_P$ ) 5 °C		30	Max 30s
Cooling speed		6 °C/ s	Max 6 °C/ s
Needed time from 25 °C to $T_p$ 25 °C		8	Max 8 minutes



## Notes

(1)Reflow soldering should  
soldering after first, LEDs v  
LED

(2)Whensoldering , do not

### 3.1.1 Soldering Iron

(1) When hand solderin

(2) The hand solder shc

### 3.1.2 Repair

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confirmed in :

LED

LED

### 3.1.3 Caution

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the top of pac  
Precautions :  
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(2) Compone  
do not warp tl

(3) Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering. Do not rapidly cool device after soldering.

## 4. Handling Precautions

### 4.1 Handling Precautions

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material. This is provided for informational purposes only and is not a warranty or endorsement.

LED	LED	100PPM
-----	-----	--------

(2) In order to prevent external material from getting into the inside of LED, which may cause malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external materials of the application products is required to be less than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsement.

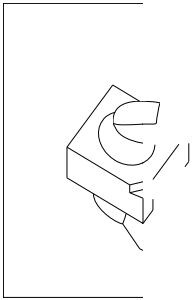
LED	LED
900PPM	1500PPM

(3) VOCs (Volatile organic compounds) emitted from materials used in the construction can penetrate silicone encapsulants of LEDs and discolor when exposed to heat and energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help address these issues. Refond advises against the use of any chemicals or materials that have or are suspected to have an adverse effect on device performance or reliability. To verify compatibility, Refond recommends that all chemicals and materials be tested in the application and environment for which they are intended to be used. Attaching LEDs with adhesives that outgas organic vapor.

LED	LED
LED	LED

LED

(4) Handle the component directly or Handle



(5) In designing a circuit rating specified for each applied, otherwise slight driving circuit must be designed. When voltage is applied to LED

LED

(6) Thermal Design is particularly important. As the characteristics decline, the heat generation of the LED is

(7) Compared to standard LEDs, LEDs are more likely to attract dust, requiring dust particles cannot be removed after the soldering of components.

other solvents are used, it must be assured that these solvents do not dissolve the resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED.

LED

Table 4-1 Storage

Conditions		Temperature	Humidity	
Storage	Before Opening Aluminum Bag	30	75%	With
	After Opening Aluminum Bag	30	60%	
Baking		60± 5	-	

(8) If the moisture absorbent material ( silica gel ) has faded away or the storage time is long, baking treatment should be performed after unpacking under the following condition ( 60±5 ) °C for above 24 hours.

60± 5                      24

If the package is flatulence or damaged, please notify the sales staff to assist.

(9) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS).

LED

(10) Other points for attention, please refer to our relevant information.

Version History/

Date	Revisor	Version	Verifier	Remarks
2020-11-25		E/0		
2020-12-25		E/1		



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Declare

This specification is written both in English and in Chinese and the latter is formal.