



**BRIGHTTEK**  
**BRIGHTTEK (EUROPE) LIMITED**

*Brighten Up The World With LED!*



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

## PRODUCT DATASHEET



- ▶ Ceramic High Power
- ▶ 3535 2.0t Series
- ▶ Cool White (6000K) / Warm White (3000K)

# NOD23S45



Release Date: 10 September 2020 Version: A1.0



## 3535 2.0t Dual Whites



**RoHS**  
Compliant

### FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 200/200mA\*
- **Forward Voltage (typ.):** 3.2/3.2V
- **Luminous Flux (typ.):** 60/45lm@200mA
- **Colour:** Cool White / Warm White
- **Colour Temperature (CCT):** 6000/3000K
- **Viewing angle:** 130/130°
- **Materials:**
  - Die: InGaN
  - Resin: Silicon (Yellow Diffused)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - CCT
- **Soldering methods:** Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 12mm tape with max.1000pcs/reel, ø180mm (7")
  - \* in the order of Cool White / Warm White

### APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Street and Tunnel Lighting

## CHARACTERISTICS:

### Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I <sub>F</sub>	350/350*	mA
Reverse Voltage	V <sub>R</sub>	5/5	V
Reverse Current @5V	I <sub>R</sub>	10/10	μA
Junction Temperature	T <sub>J</sub>	125	°C
Operating Temperature	T <sub>OPR</sub>	-40~+85	°C
Storage Temperature	T <sub>STG</sub>	-40~+100	°C
Soldering Temperature	T <sub>SOL</sub>	260	°C
Thermal Resistance - Junction to Solder Point	R <sub>th</sub>	16	°C/W

\* in the order of Cool White / Warm White

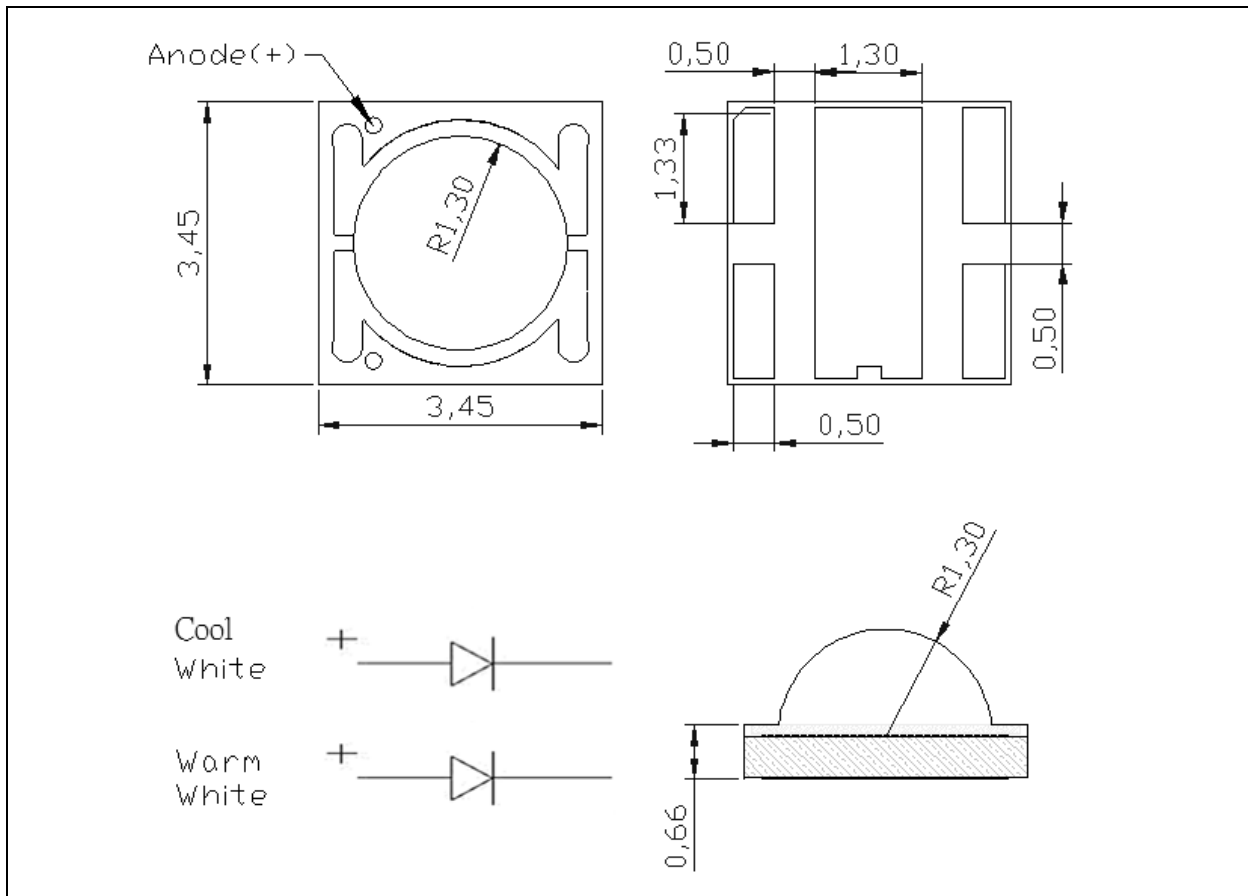
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V <sub>F</sub>	3.0/3.0	3.2/3.2	3.5/3.5*	V	I <sub>F</sub> =200mA
Luminous Flux	Φ <sub>V</sub>	---	60/45	---	lm	I <sub>F</sub> =200mA
		---	90/65	---		I <sub>F</sub> =350mA
Colour Temperature	CCT	5000/2580	6000/3000	7800/3400	K	I <sub>F</sub> =200mA
Viewing Angle	2θ <sub>1/2</sub>	---	130/130	---	deg	I <sub>F</sub> =200mA

- \* in the order of Cool White / Warm White
- Luminous flux (Φ<sub>V</sub>) ±5%, Forward Voltage (V<sub>F</sub>) ±0.06V, Viewing angle(2θ<sub>1/2</sub>) ±10°

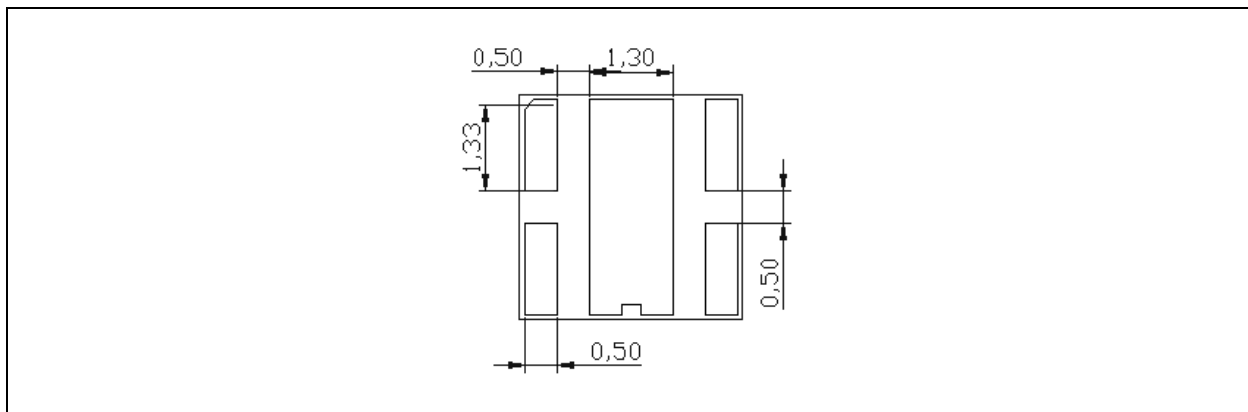
## OUTLINE DIMENSION:

### Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.13\text{mm}$ , unless otherwise noted.

### Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.12\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 200\text{mA}$ ):

Code	Min.	Max.	Unit
V3035	3.0	3.5	V

 Luminous Flux Classifications ( $I_F = 200\text{mA}$ ):

Code	Min.	Max.	Unit
L1	40/25	90/75	lm

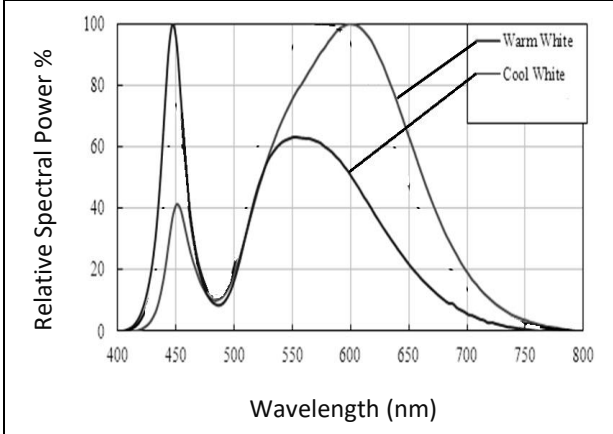
 CCT Classifications ( $I_F = 200\text{mA}$ ):

Code	Min.	Max.	Unit
CW1	5000	5500	K
CW2	5500	6500	
CW3	6500	7800	

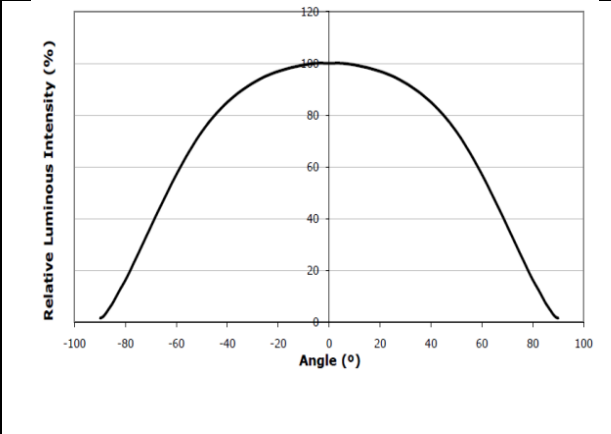
Code	Min.	Max.	Unit
WW1	2580	2870	K
WW 2	2870	3000	
WW 3	3000	3400	

**ELECTRO-OPTICAL CHARACTERISTICS:**

Relative Spectral Power v.s. Wavelength

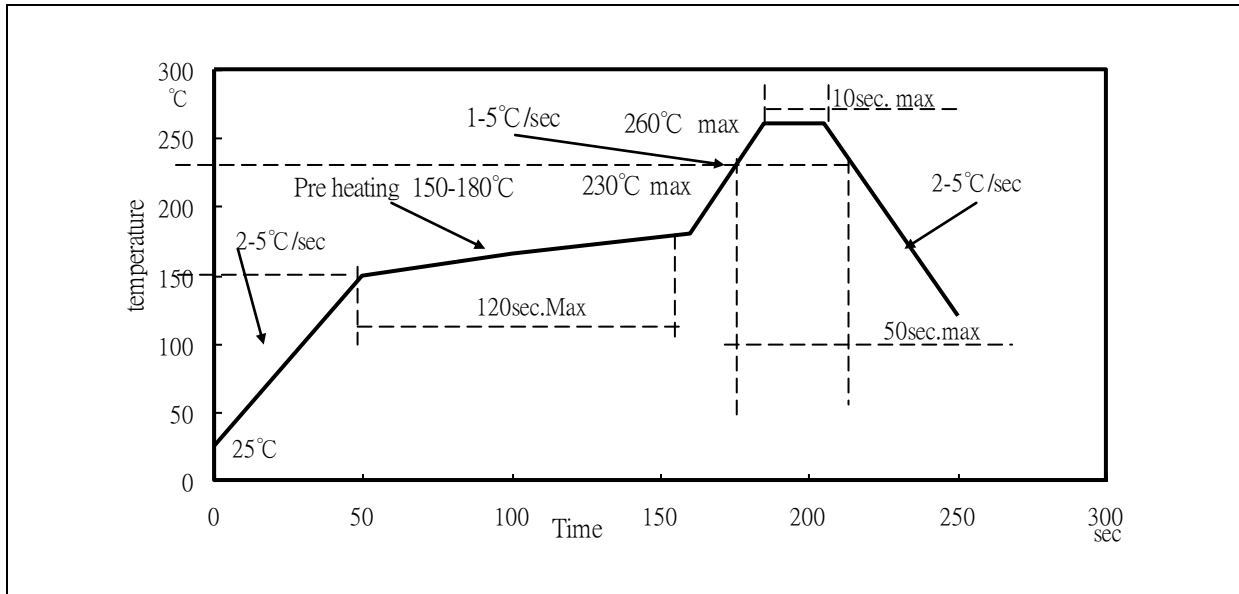


Directive Radiation



## RECOMMENDED SOLDERING PROFILE:

### Reflow Lead-free Solder:



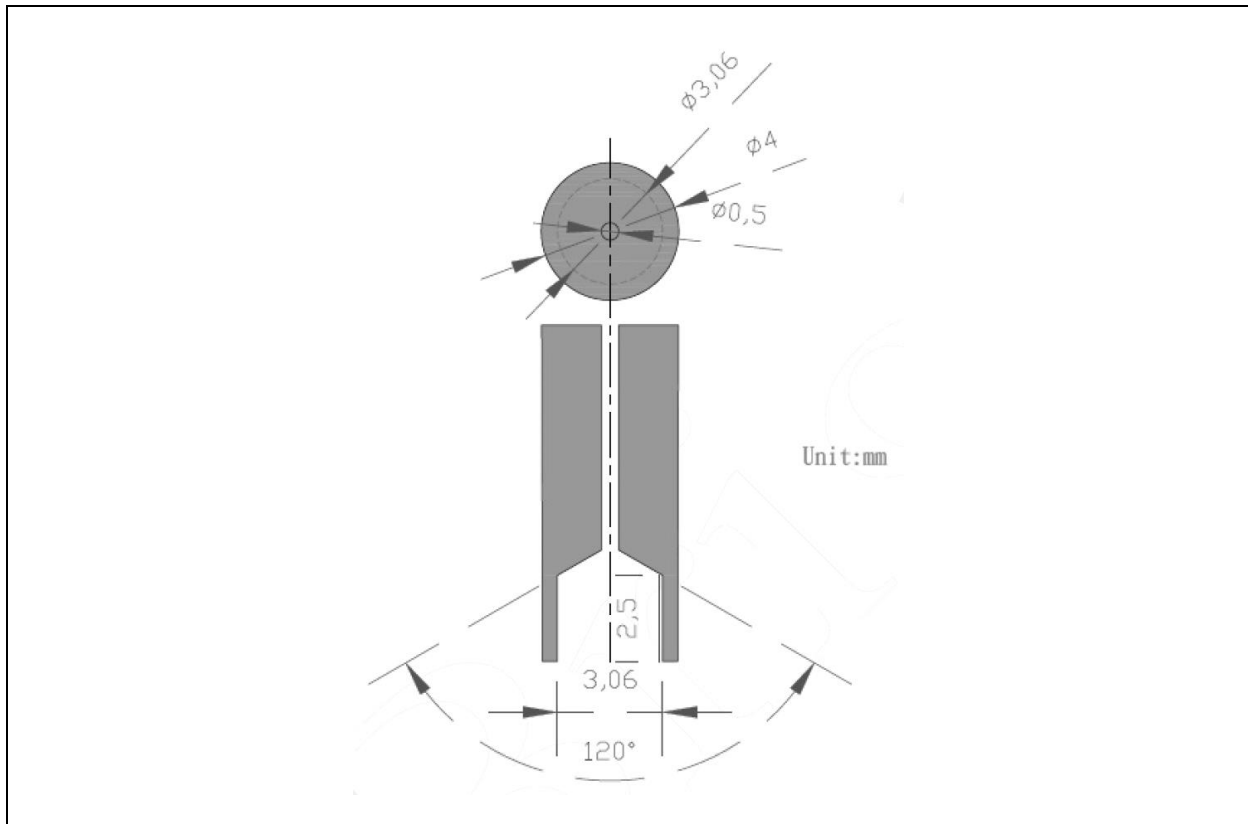
#### Note:

1. Maximum reflow soldering: 2 times.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

## RECOMMENDED NOZZLE FOR SMT:

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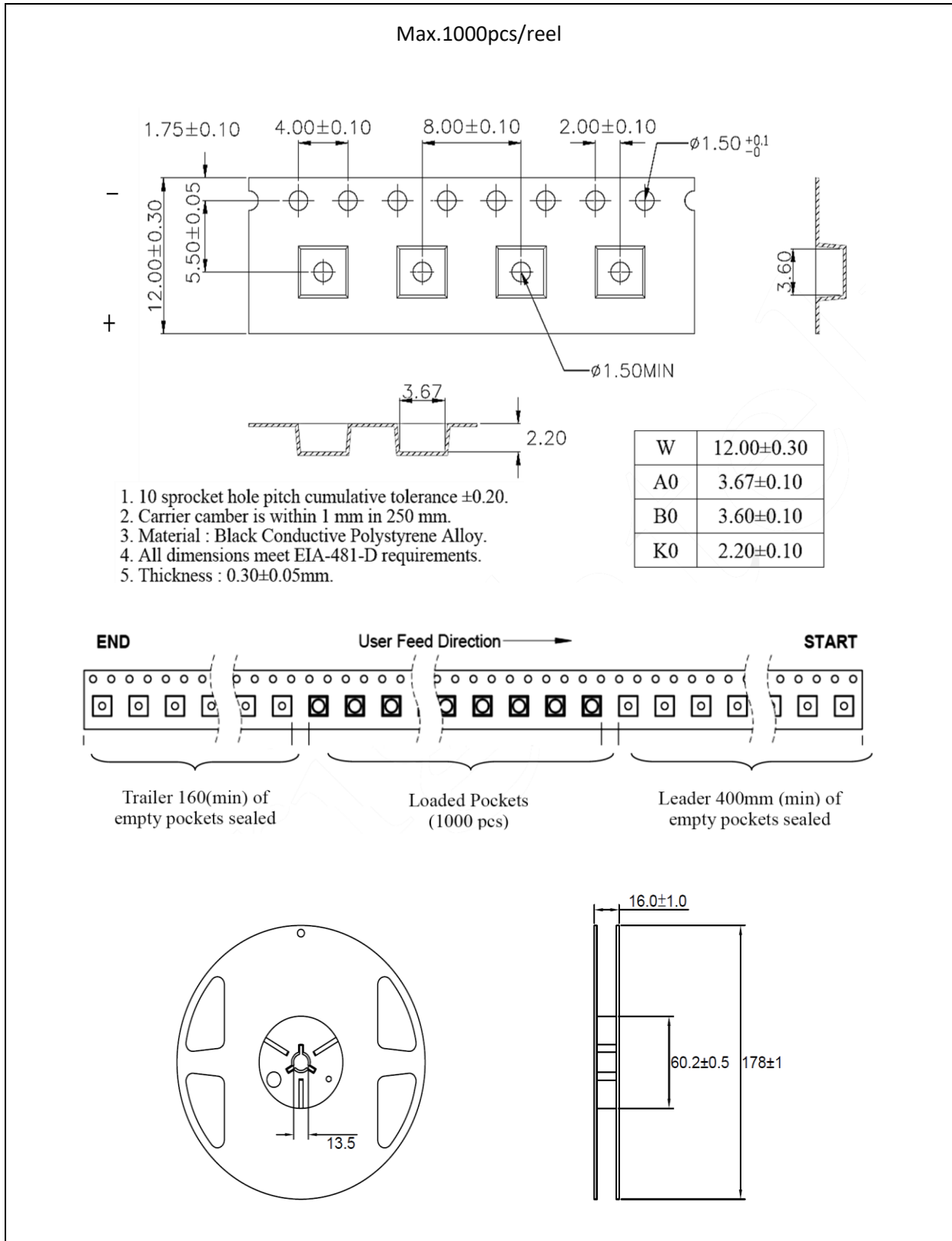
Recommended Pick & Place Nozzle:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$ , unless otherwise noted.

# PACKING SPECIFICATION:

Reel Dimension:





## PRECAUTIONS OF USE:

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### Storage:

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

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent <10% R.H. and apply baking before use.

### Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±3°C x 24hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

### Testing Circuit:



Must apply resistor(s) for protection (over current proof).

### Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

### ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

**REVISION RECORD:**

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Version	Date	Summary of Revision
A1.0	02/02/2016	Datasheet set-up.
A1.1	10/09/2020	Revise storage conditions.