BRIGHTEK

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Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

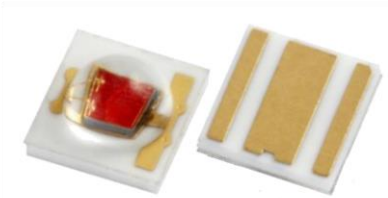
# PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- ► Ceramic High Power
- ► 3535 2.22t Series
- ► Yellow (590nm)

Release Date: 01 June 2022 Version: A1.1

# N0Y46S62



3535 2.0t Series

## 3535 2.22t Series

RoHS Compliant

## FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 2.2V
- **Luminous Flux (typ.):** 60lm@350mA
- **Colour:** Yellow
- **Wavelength:** 585~595nm
- **Viewing angle:** 120°
- **Materials:**
  - Die: AlGaInP
  - Resin: Silicon (Water Clear)
  - L/T Finish: Au plated
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - Dominant Wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 12mm tape with max.1000pcs /reel, ø180mm (7'')

## APPLICATIONS:

- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Automotive

## CHARACTERISTICS:

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

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| DC Forward Current | $I_F$ | 700 | mA |
| Pulse Forward Current D=0.01S; duty 1/10 | $I_{PF}$ | 1000 | mA |
| Reverse Voltage | $V_R$ | 5 | V |
| Reverse Current @5V | $I_R$ | 10 | μA |
| Junction Temperature | $T_j$ | 150 | °C |
| Thermal Resistance Junction to Solder Point | Rth | 10 | °C/W |
| Electrostatic Discharge (HBM: MIL-STD-883 C 3B) | ESD | 8000 | V |
| Operating Temperature | $T_{OPR}$ | -40~+105 | °C |
| Storage Temperature | $T_{STG}$ | -40~+105 | °C |
| Soldering Temperature | $T_{SOL}$ | 260 | °C |

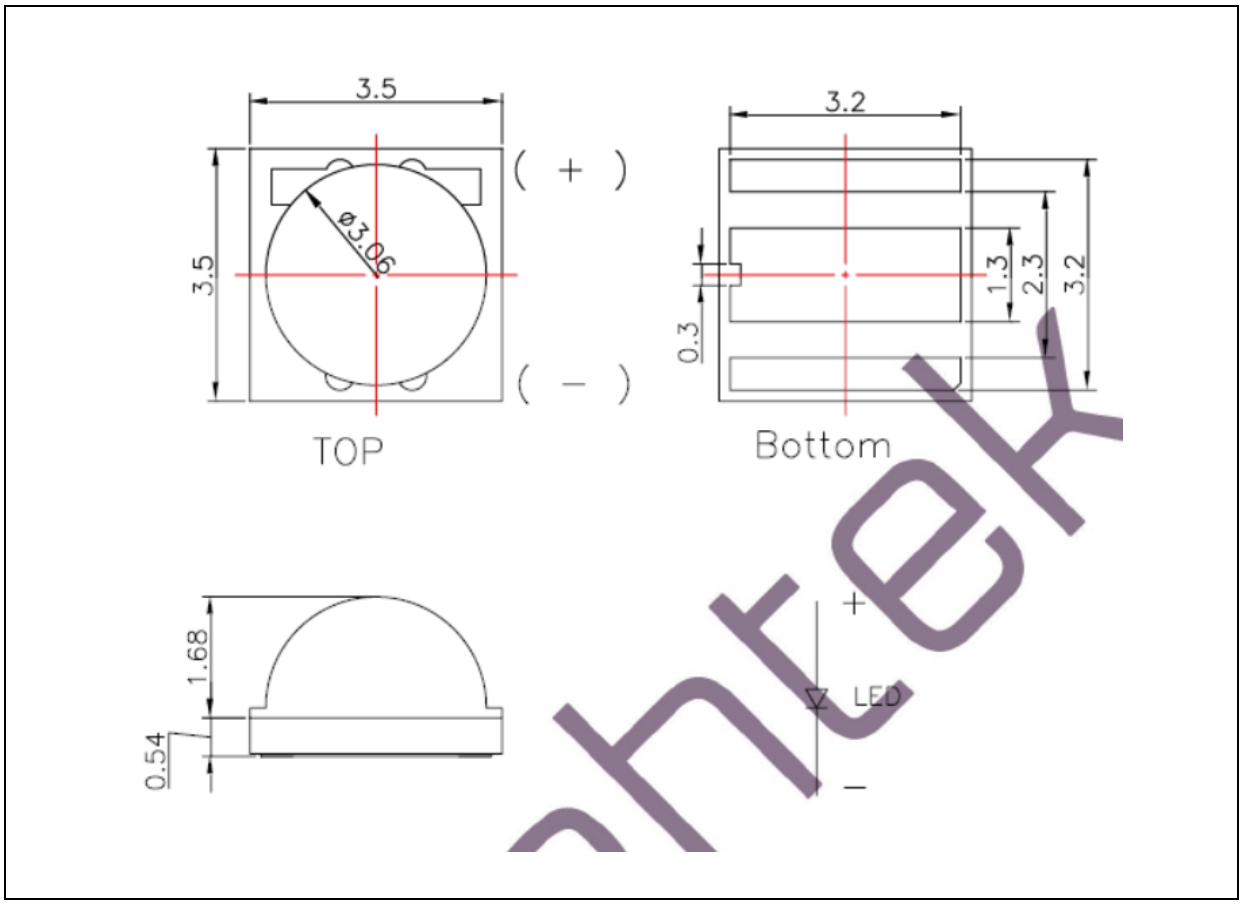
### Electrical & Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Values | | | Unit | Test Condition |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Forward Voltage | $V_F$ | 1.8 | --- | 2.6 | V | $I_F$=350mA |
| Luminous Flux | $\Phi_V$ | 50 | --- | 70 | lm | $I_F$=350mA |
| Dominant Wavelength | $\lambda_D$ | 585 | --- | 595 | nm | $I_F$=350mA |
| Viewing Angle | $2\theta_{1/2}$ | --- | 120 | --- | deg | $I_F$=350mA |

1. Luminous flux ($\Phi_V$) ±7%, Forward Voltage ($V_F$) ±0.05V, Viewing angle($2\theta_{1/2}$) ±10°

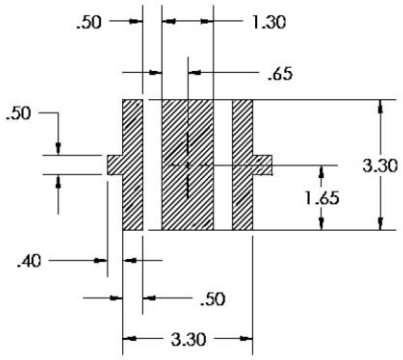
## OUTLINE DIMENSION:

Package Dimension:

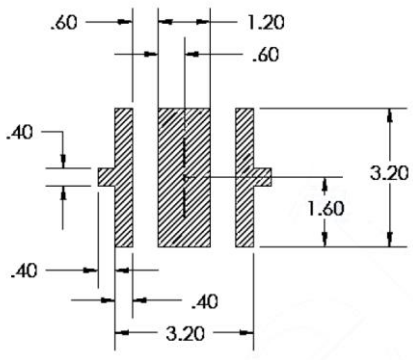



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:




Recommended PCB Solder Pad




Recommended Stencil Pattern

1. Dimensions are in millimetre (mm).
2. Tolerance ±0.12mm with angle tolerance ±0.5°.

## BINNING GROUPS:

Forward Voltage Classifications ($I_F$ = 350mA):

| Code | Min. | Max. | Unit |
|---|---|---|---|
| V1820 | 1.8 | 2.0 | V |
| V2022 | 2.0 | 2.2 | |
| V2224 | 2.2 | 2.4 | |
| V2426 | 2.4 | 2.6 | |

Luminous Flux Classifications ($I_F$ = 350mA):

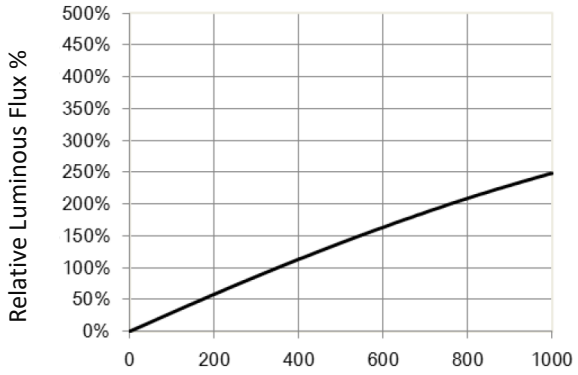
| Code | Min. | Max. | Unit |
|---|---|---|---|
| B25 | 50 | 55 | lm |
| B26 | 55 | 60 | |
| B27 | 60 | 65 | |
| B28 | 65 | 70 | |

Dominant Wavelength Classifications ($I_F$ = 350mA):

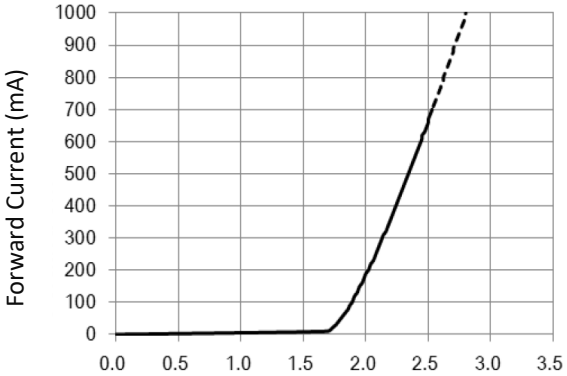
| Code | Min. | Max. | Unit |
|---|---|---|---|
| Y585 | 585 | 590 | nm |
| Y590 | 590 | 595 | |

## ELECTRO-OPTICAL CHARACTERISTICS:

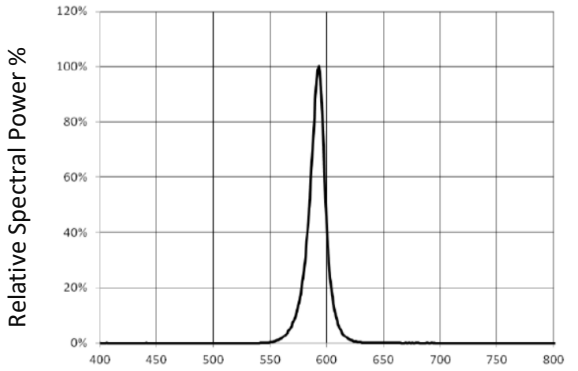
### Relative Luminous Flux v.s. Forward Current



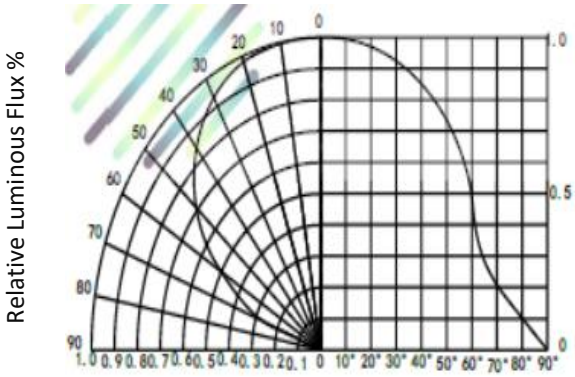

### Forward Current v.s. Forward Voltage



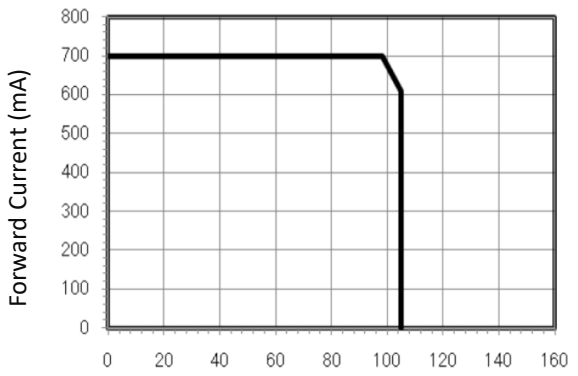

### Relative Spectral Power v.s. Wavelength

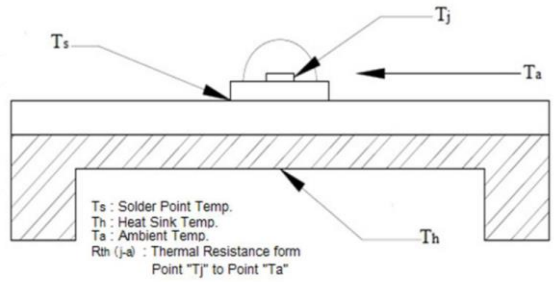



### Directive Radiation



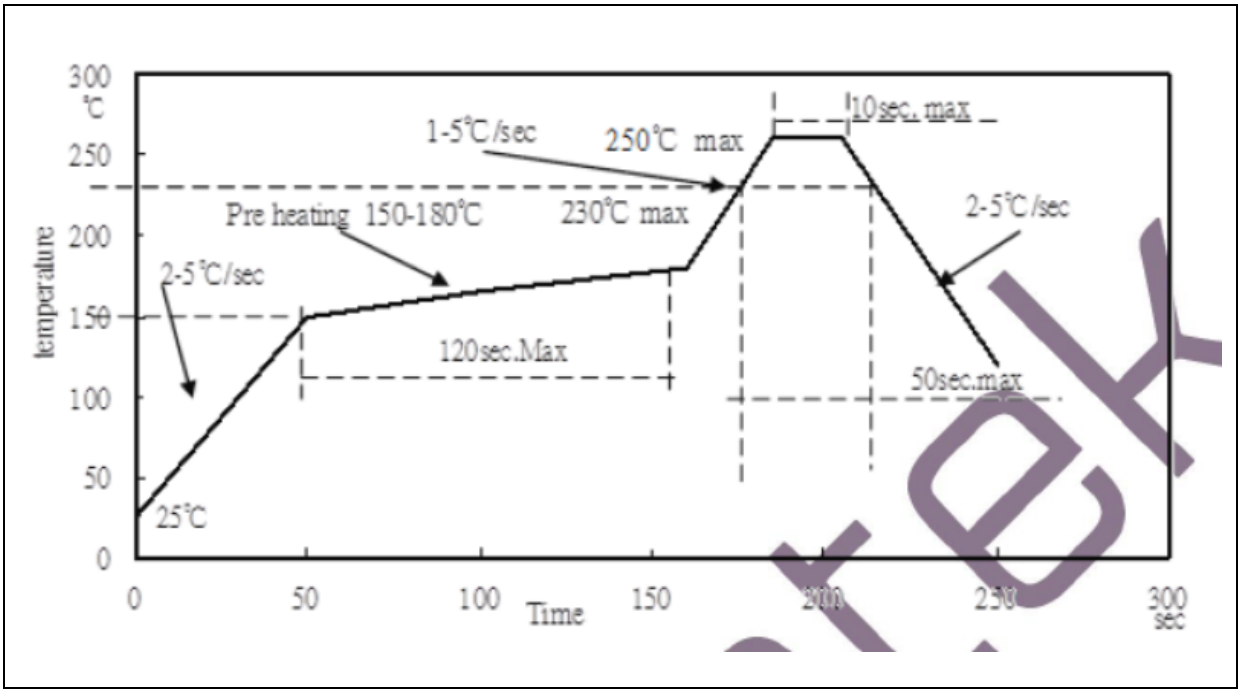

### Forward Current Derating Curve



## RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

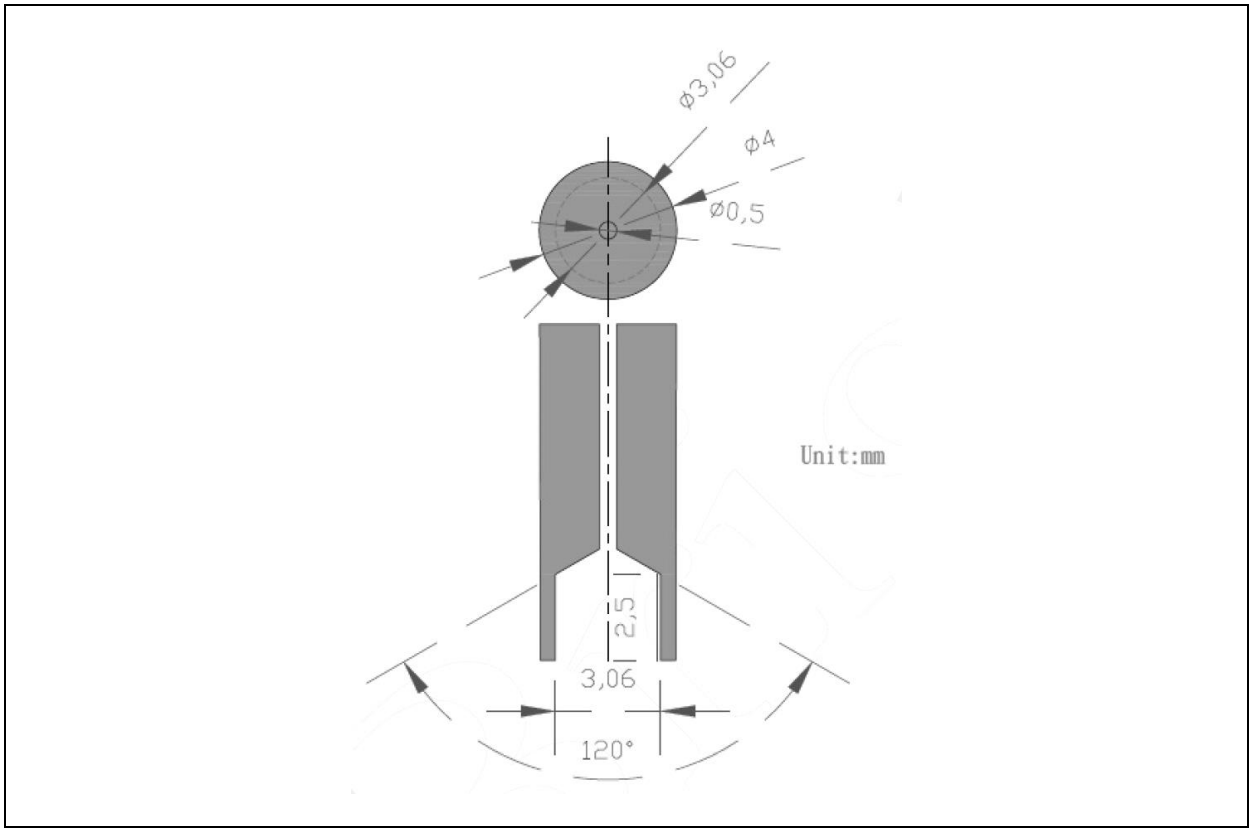



Note:

1. Maximum reflow soldering: 2 times.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 250°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

## RECOMMENDED NOZZLE FOR SMT:

Recommended Pick & Place Nozzle:

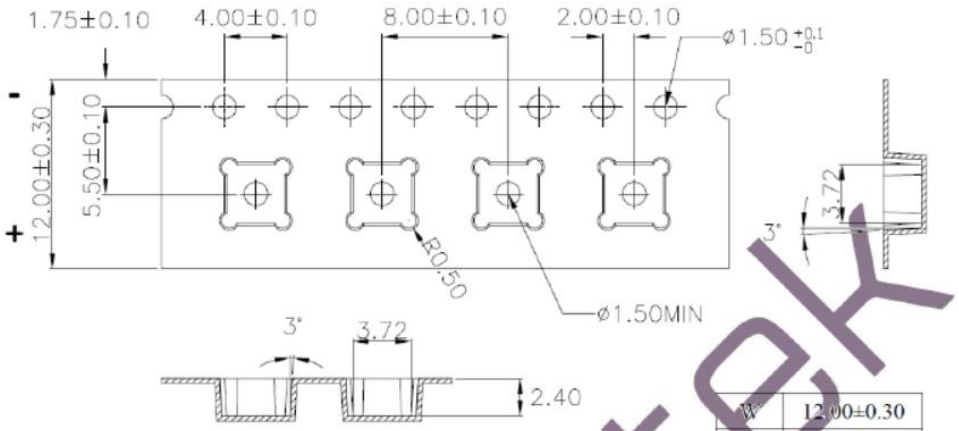



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.1mm, unless otherwise noted.

## PACKING SPECIFICATION:

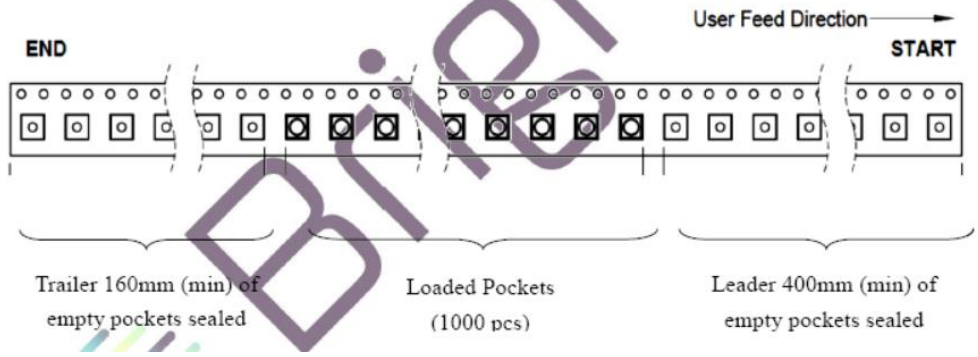
Reel Dimension:

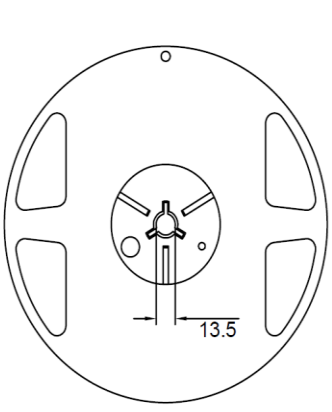
Max.1000pcs /reel

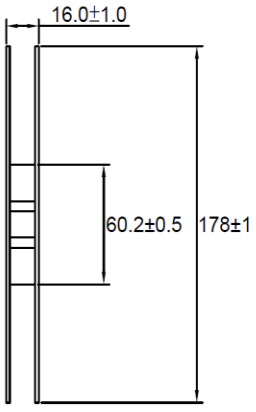



| | |
|---|---|
| W | 12.00±0.30 |
| A0 | 3.72±0.10 |
| B0 | 3.72±0.10 |
| K0 | 2.40±0.10 |

1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30±0.05mm.



## PRECAUTIONS OF USE:

### 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 descanting agent <10% R.H. and apply baking before use.

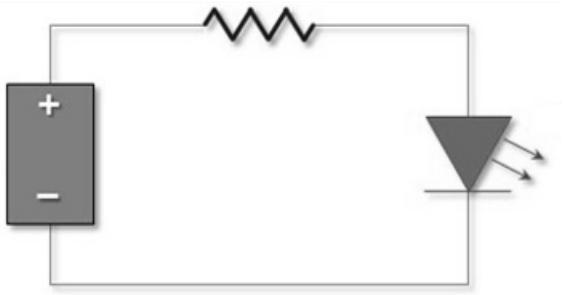
### Baking:

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 handing 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:

| Version | Date | Summary of Revision |
|---|---|---|
| A1.0 | 30/09/2019 | Datasheet set-up. |
| A1.1 | 01/06/2022 | New datasheet format. |