



**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

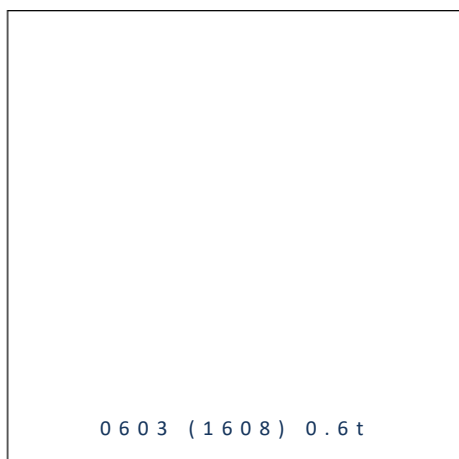


- ▶ PCB / CHIP LED
- ▶ 0603 (1608) 0.6t
- ▶ Amber (597~602nm)

N0A68S59-5MA



Release Date: 09 January 2025 Version: A1.0



**0603 (1608) 0.6t**

**RoHS  
Compliant**



### FEATURES:

- **Package:** PCB / CHIP LED Top View
- **Forward Current:** 5~20mA
- **Forward Voltage (typ.):** 1.9V
- **Luminous Intensity (typ.):** 45mcd@5mA
- **Colour:** Amber
- **Dominant Wavelength:** 597~602nm
- **Viewing Angle:** 120°
- **Materials:**
  - Die: AlGaInP
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -30~+80°C
- **Storage Temperature:** -40~+90°C
- **Grouping Parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering Methods:** Reflow
- **MSL Level:** 3 acc. to JEDEC
- **Packing:** 8mm tape with max.4000/reel, ø180mm (7")

### APPLICATIONS:

- Backlighting
- Indication Light
- Switch light
- Dashboard

## CHARACTERISTICS:

### Absolute Maximum Characteristics ( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Ratings	Unit
Forward Current	$I_F$	20	mA
Peak Forward Current (duty 1/10; 1kHz)	$I_{FP}$	60	mA
Reverse Voltage	$V_R$	5	V
Reverse Current @5V	$I_R$	10	$\mu\text{A}$
Power Dissipation	$P_D$	50	mW
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	$T_{OPR}$	$-30^{\circ}\text{C}\sim+80^{\circ}\text{C}$	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	$-40^{\circ}\text{C}\sim+90^{\circ}\text{C}$	$^{\circ}\text{C}$

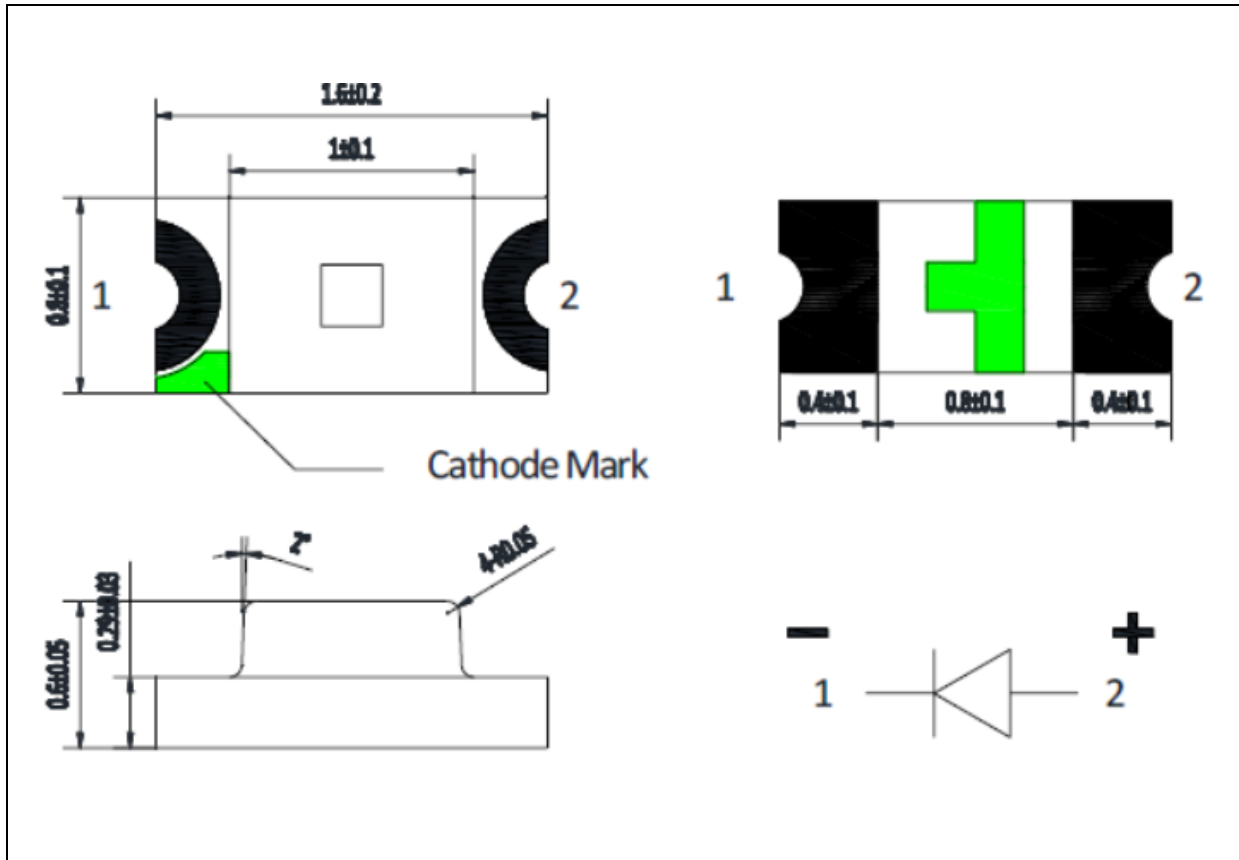
### Electrical & Optical Characteristics ( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	$V_F$	1.7	---	2.2	V	$I_F=5\text{mA}$
Luminous Intensity	$I_v$	36	---	54	mcd	$I_F=5\text{mA}$
Dominant Wavelength	$\lambda_D$	597	---	602	nm	$I_F=5\text{mA}$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=5\text{mA}$

1. Luminous intensity ( $I_v$ )  $\pm 10\%$ , Forward Voltage ( $V_F$ )  $\pm 0.1\text{V}$ .

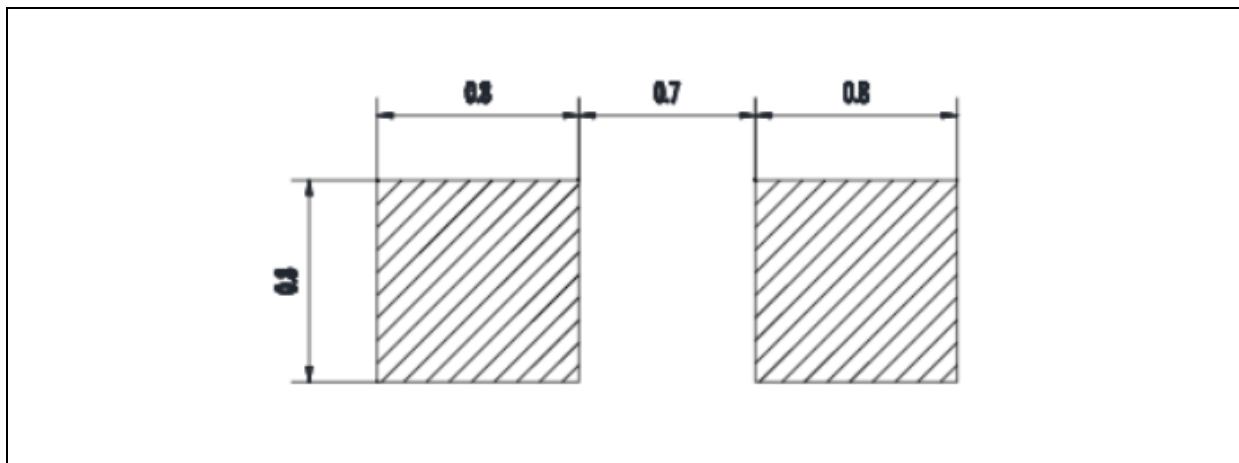
## OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.2\text{mm}$ , unless otherwise noted.

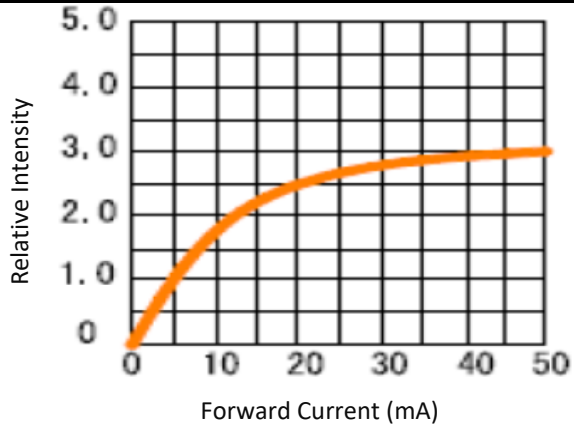
Recommended Soldering Pad Dimension:



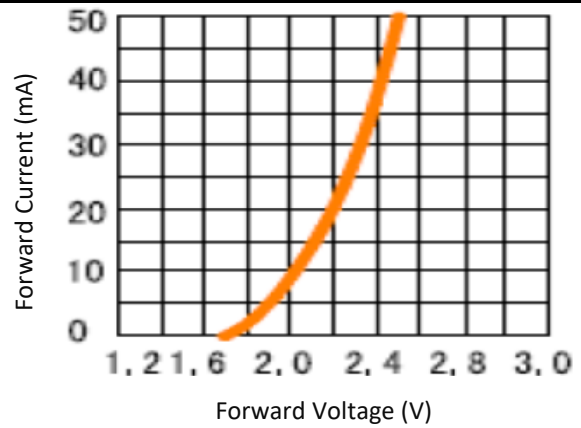
1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

## ELECTRO-OPTICAL CHARACTERISTICS:

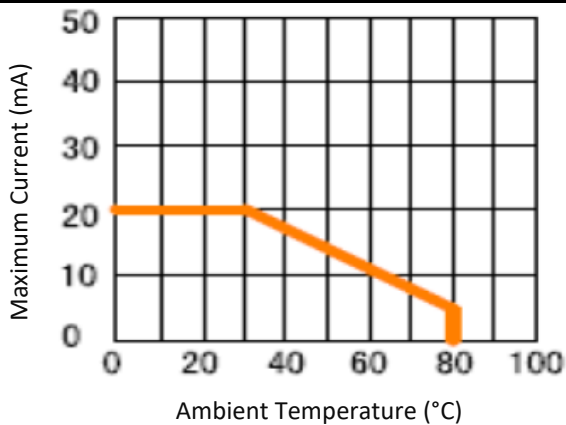
Relative Intensity v.s. Forward Current



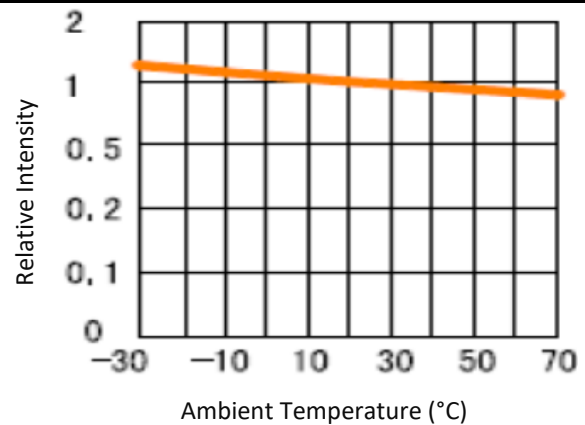
Forward Current v.s. Forward Voltage



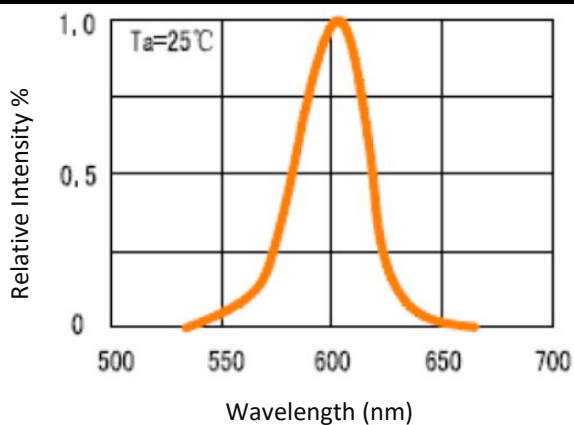
Temperature Derating Chart



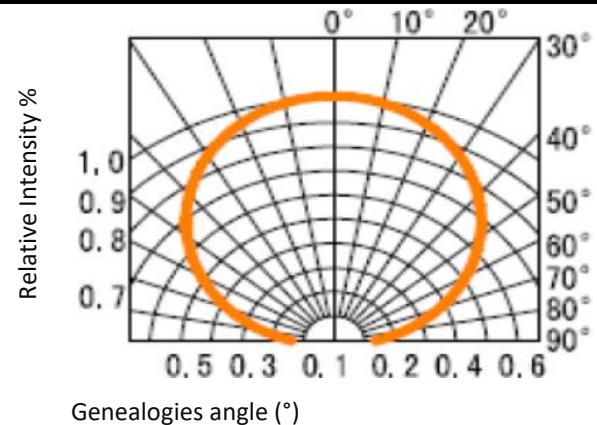
Relative Intensity Flux v.s. Junction Temperature



Relative Intensity v.s. Wavelength



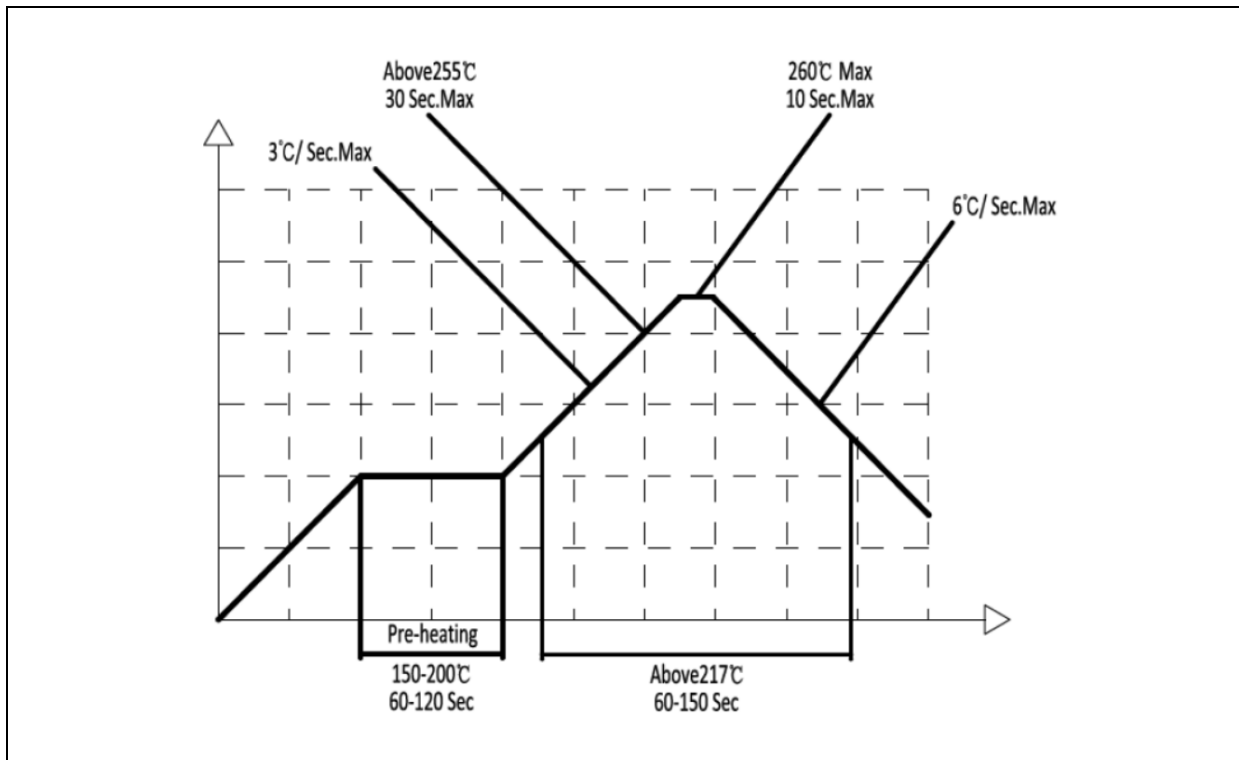
Relative Intensity v.s. Angular Displacement





## RECOMMENDED SOLDERING PROFILE:

Reflow solder:



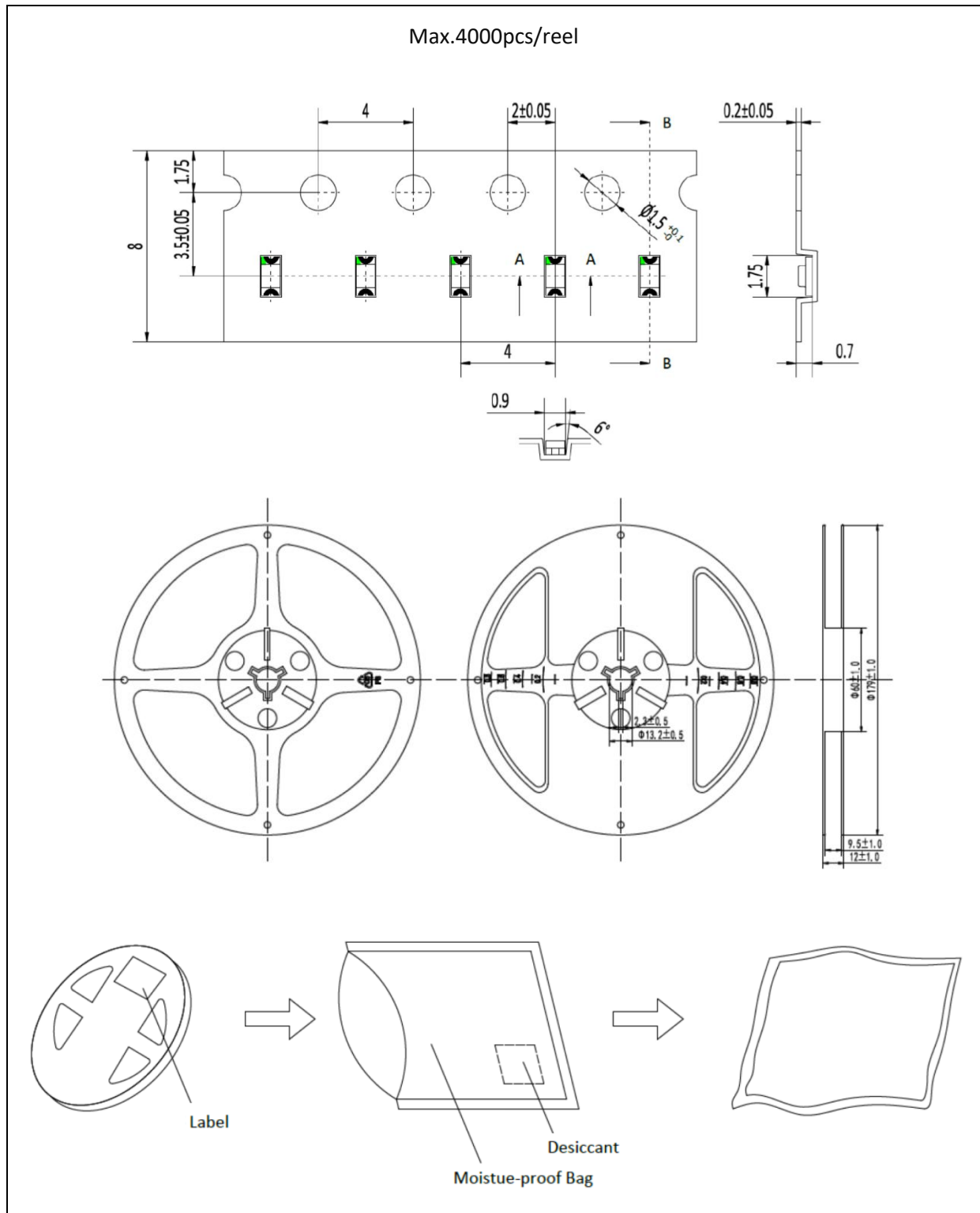
Note:

1. Recommend reflow temperature 240°C. The maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 2 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.



## 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.

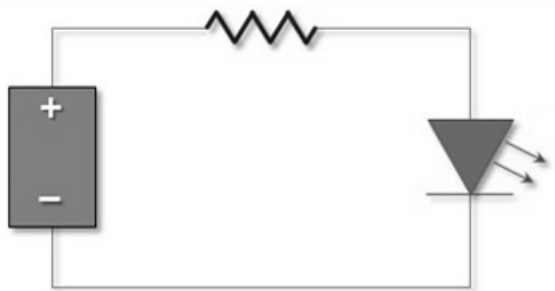
### Baking:

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±5°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-electrostatic 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	09/01/2025	Datasheet set-up.