



**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 1.95t Series
- ▶ Cool White / Red / Green / Blue

NOM52S13



Release Date: 18 August 2020 Version: A1.0



### 3535 1.95t Series

**RoHS**  
Compliant



#### FEATURES (White/Red/Green/Blue\*):

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350/350/350/350mA
- **Forward Voltage (typ.):** 3.3/2.4/3.3/3.3V
- **Luminous Flux (typ.):** 105/35/75/15lm@350mA
- **Colour:** Cool White/Red/Green/Blue
- **CCT/Wavelength:** 6300K/627/525/460nm
- **Viewing angle:** 125°
- **Materials:**
  - Die: InGaN/AlGaInP/InGaN/InGaN
  - Resin: Silicon (Water Clear)
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous flux
  - CCT/Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** MSL 3 according to J-STD020
- **Packing:** 12mm tape Max.1000pcs/reel, ø180mm (7")

#### APPLICATIONS:

- Decoration Lighting
- Wall Washer
- Spot Light
- Outdoor Lighting
- Mini Projector
- Architectural Lighting
- Commercial Lighting
- Stage Lighting

**CHARACTERISTICS:**


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

Parameter	Symbol	Ratings	Unit
Maximum Forward Current	I <sub>MAX</sub>	350	mA
Pulse Current D=0.01s Duty 1/10	I <sub>FP</sub>	500	mA
Reverse Voltage	V <sub>R</sub>	5	V
Reverse Current @5V	I <sub>R</sub>	10	μA
Junction Temperature	T <sub>J</sub>	115	°C
Thermal Resistance Junction to Solder Point	R <sub>TH</sub>	20	°C/W
Operating Temperature	T <sub>OPR</sub>	-40~+80	°C
Storage Temperature	T <sub>STG</sub>	-40~+100	°C

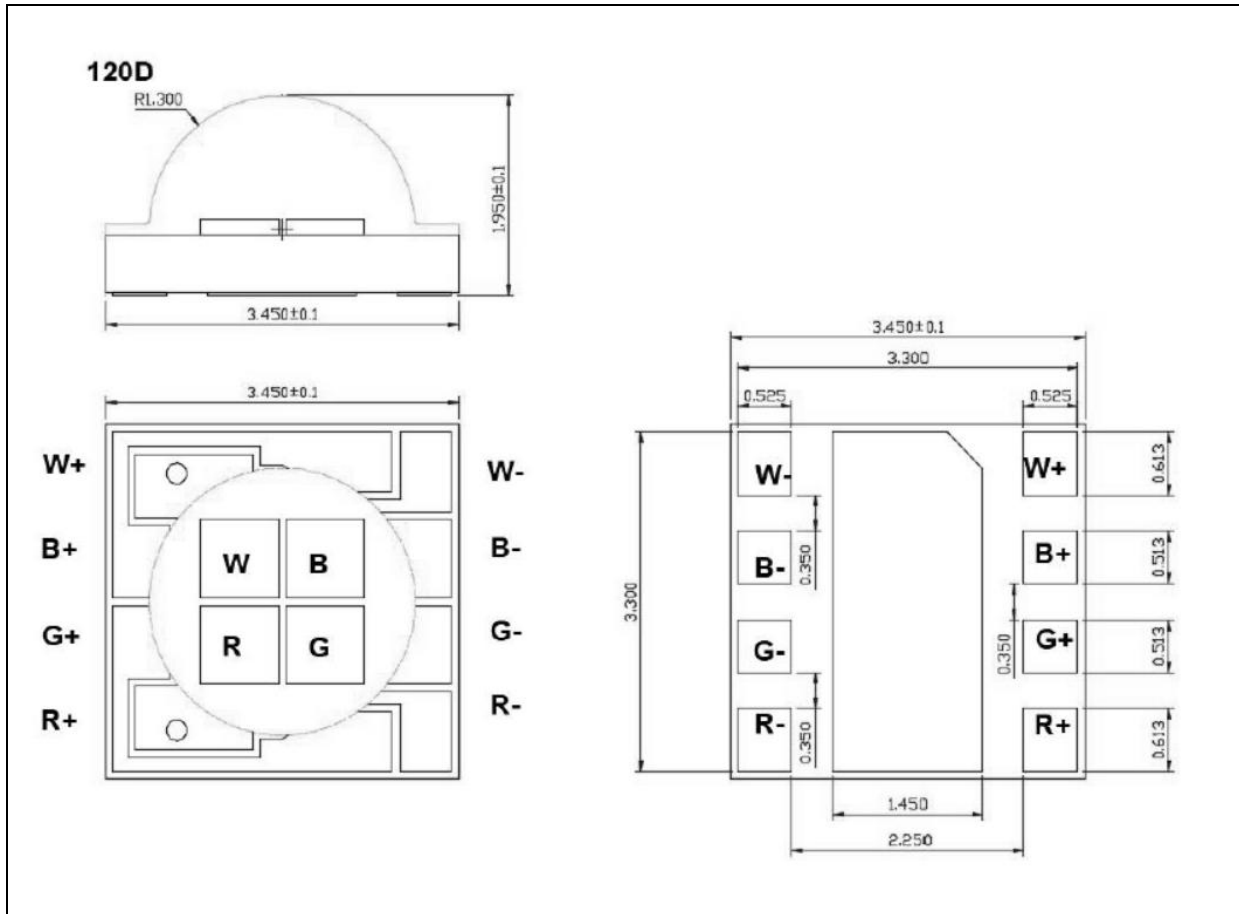
## Electrical &amp; Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
White - Forward Voltage	V <sub>F</sub>	3.0	3.3	3.6	V	I <sub>F</sub> =350mA
White - Luminous Flux	Φ <sub>V</sub>	100	---	110	lm	I <sub>F</sub> =350mA
White – Colour Temperature	CCT	5500	---	7000	K	I <sub>F</sub> =350mA
Red - Forward Voltage	V <sub>F</sub>	2.0	2.4	2.8	V	I <sub>F</sub> =350mA
Red - Luminous Flux	Φ <sub>V</sub>	30	---	40	lm	I <sub>F</sub> =350mA
Red - Wavelength	W <sub>P</sub>	620	---	635	nm	I <sub>F</sub> =350mA
Green - Forward Voltage	V <sub>F</sub>	3.0	3.3	3.6	V	I <sub>F</sub> =350mA
Green - Luminous Flux	Φ <sub>V</sub>	70	---	80	lm	I <sub>F</sub> =350mA
Green - Wavelength	W <sub>P</sub>	515	---	530	nm	I <sub>F</sub> =350mA
Blue - Forward Voltage	V <sub>F</sub>	3.0	3.3	3.6	V	I <sub>F</sub> =350mA
Blue - Luminous Flux	Φ <sub>V</sub>	10	---	20	lm	I <sub>F</sub> =350mA
Blue - Wavelength	W <sub>P</sub>	450	---	465	nm	I <sub>F</sub> =350mA
Viewing Angle	2θ <sub>1/2</sub>	---	125	---	deg	I <sub>F</sub> =350mA

 1. Luminous intensity (I<sub>v</sub>) ±5%, Forward Voltage (V<sub>F</sub>) ±0.1V

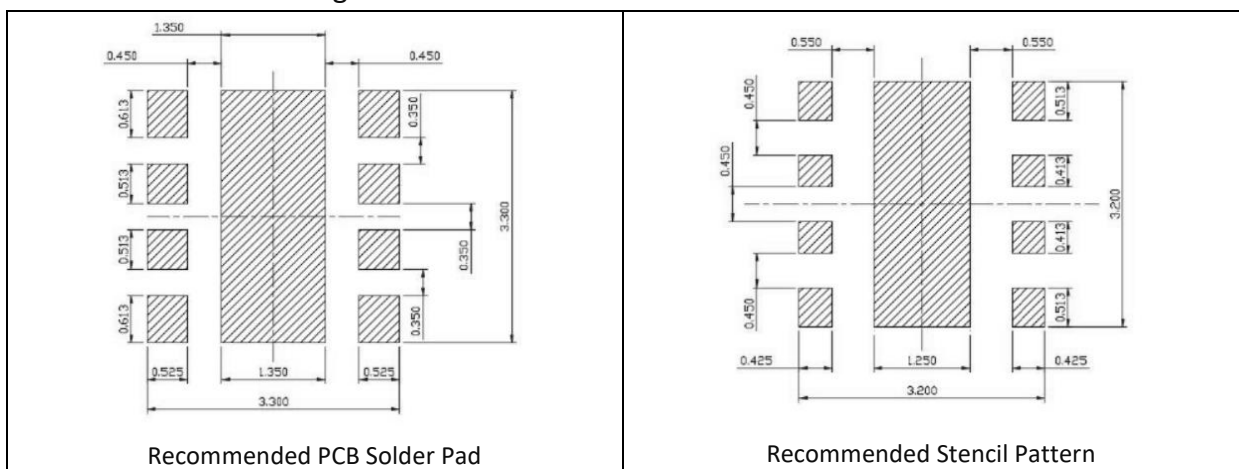
## OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



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

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 350\text{mA}$ ):

Code		Min.	Max.	Unit
VA	W	3.0	3.3	V
		3.3	3.6	
	R	2.0	2.4	
		2.4	2.8	
	G	3.0	3.3	
		3.3	3.6	
	B	3.0	3.3	
		3.3	3.6	

 CCT/Wavelength Classifications ( $I_F = 350\text{mA}$ ):

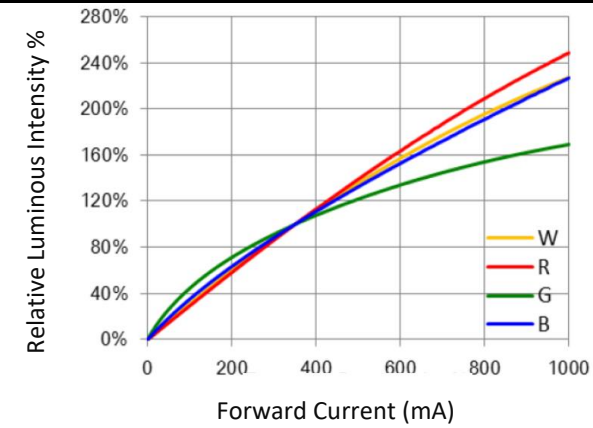
Code	Min.	Max.	Unit
White	5500	7000	K
Red	620	635	nm
Green	515	530	nm
Blue	450	465	nm

 Lumen Flux Classifications ( $I_F = 350\text{mA}$ ):

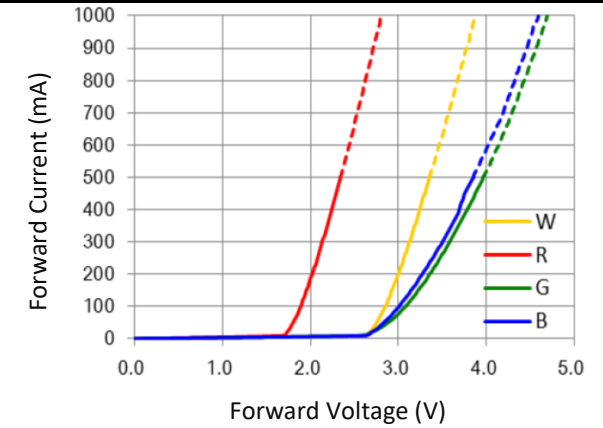
Code	Min.	Max.	Unit
White	100	110	lm
Red	30	40	lm
Green	70	80	lm
Blue	10	20	lm

## ELECTRO-OPTICAL CHARACTERISTICS:

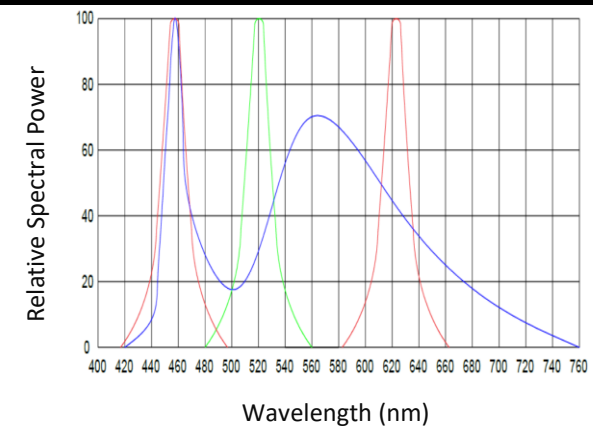
Relative Luminous Intensity v.s. Forward Current



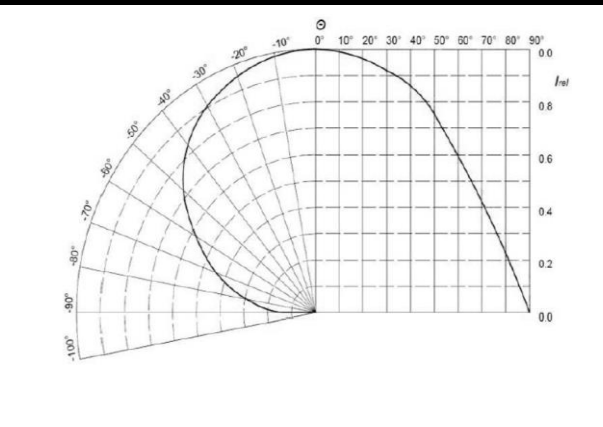
Forward Current v.s. Forward Voltage



Luminous Spectrum

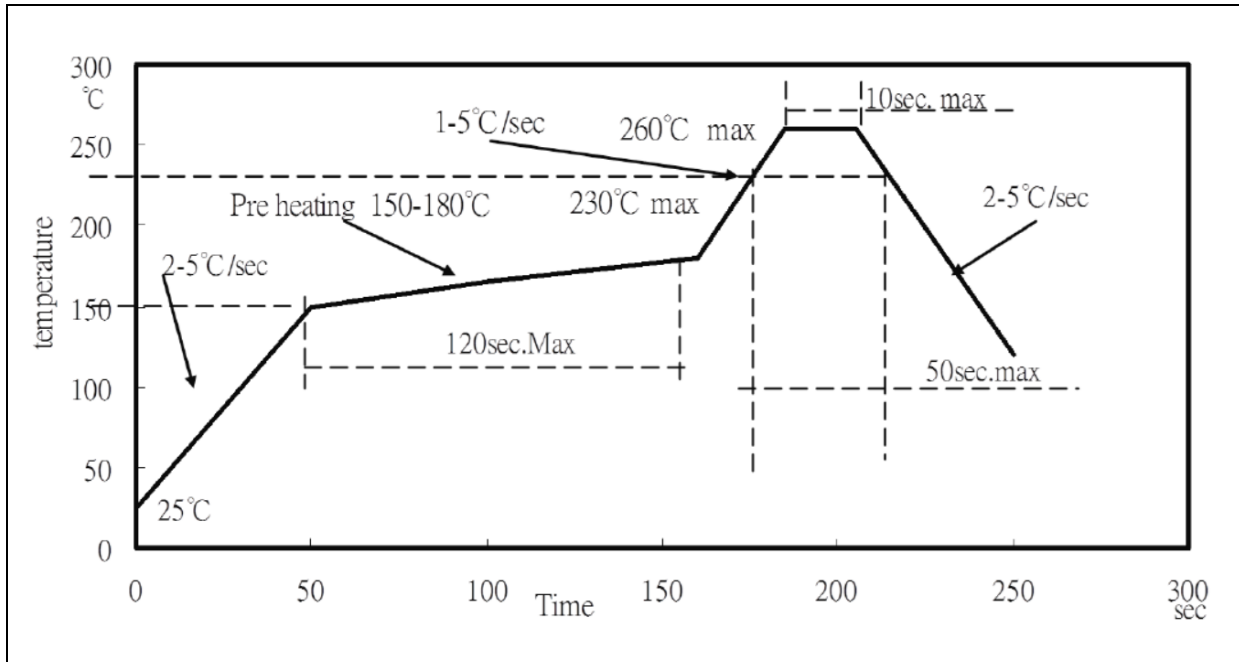


Directive Radiation



## RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

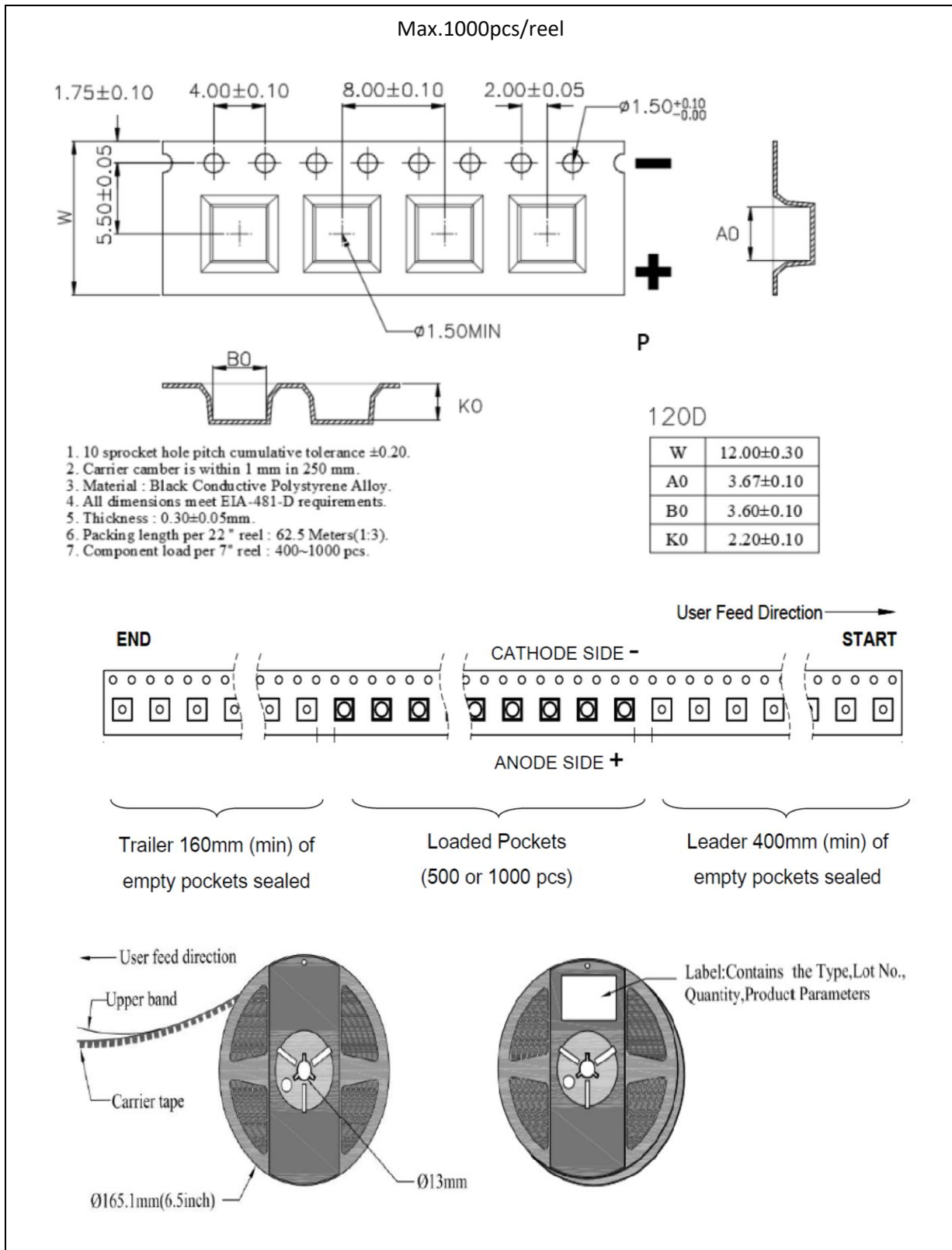


Note:

1. Maximum reflow soldering: 2 times with no more than 24 hours gap in between.
2. Die slug is to be soldered.
3. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 260°C.
4. 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.

### Baking:

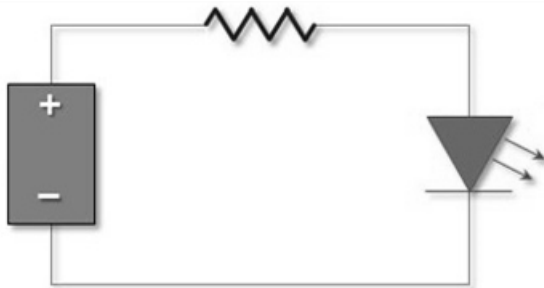
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

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-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	18/08/2020	Datasheet set-up.