BRIGHTEK

BRIGHTEK (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 1.65t Series
- UV (270~285nm)

Release Date: 11 September 2020 Version: A1.0

N0Q52S34Z

3535 1.65t Series

RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Quartz Glass Lens
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 6.5V
- **Radiant Power (typ.):** 2.0mW@20mA
- **Colour:** Ultraviolet (UV) - UVC
- **Wavelength:** 270~285nm
- **Viewing angle:** 125°
- **Materials:**
  - Die: InGaN
  - Resin: Quartz Glass (Water Clear)
  - L/F: AlN
- **Junction Temperature:** +65°C
- **Storage Temperature:** -40~+80°C
- **Grouping parameters:**
  - Forward voltage
  - Radiant power
  - Peak Wavelength
- **Soldering methods:** Reflow soldering
- **MSL:** Level 4 according to J-STD020
- **Packing:** 12mm tape with min.100pcs/reel, ø180mm (7'')

APPLICATIONS:

- Disinfection
- Sterilization
- Bio-Analysis
- Detection
- Sensor Light
- Fluorescent Spectroscopy

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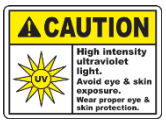

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CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Maximum Forward Current	I_{MAX}	20	mA
Junction Temperature	T_j	65	°C
Thermal Resistance Junction to Solder Point	R_{THJS}	55	°C/W
Operating Temperature	T_{OPR}	-10~+50	°C
Storage Temperature	T_{STG}	-40~+80	°C
Solder Temperature	T_{SOL}	245	°C

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	5.5	6.5	8.0	V	I_F=20mA
Radiant Power	P_O	1.5	---	3.0	mW	I_F=20mA
Wavelength	W_P	270	---	285	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	125	---	deg	I_F=20mA

1. Radiant Power (P_O) ±10%, Forward Voltage (V_F) ±0.2V, Viewing angle($2\theta_{1/2}$) ±10°, Wavelength (nm) ±2nm

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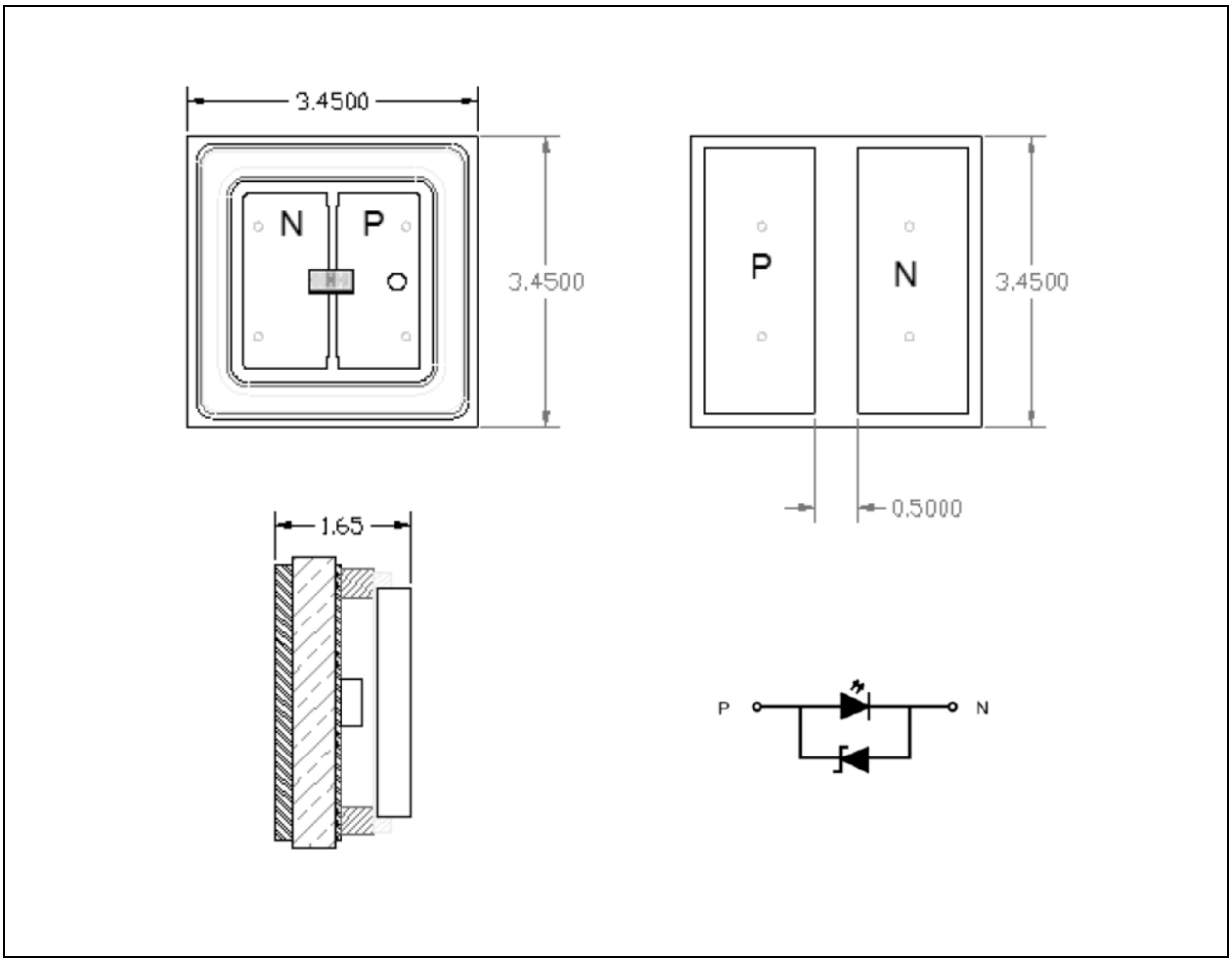
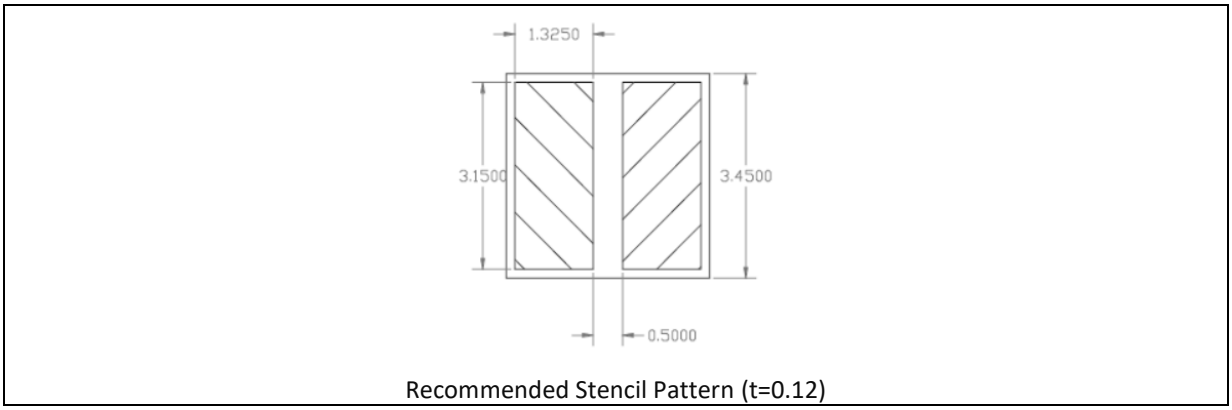
OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



Recommended Stencil Pattern (t=0.12)

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

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BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
V1	5.5	6.5	V
V2	6.5	8.0	

Radiant Power Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
P1	1.5	3.0	mW

Wavelength Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
UVC	270	285	nm

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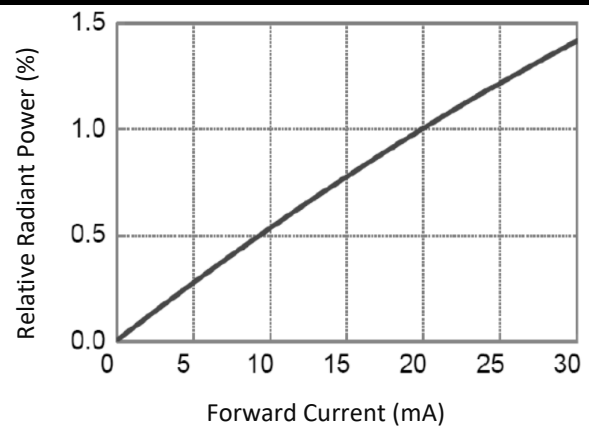
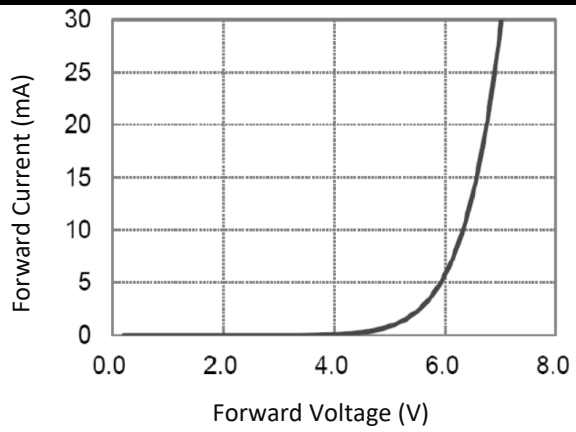
ELECTRO-OPTICAL CHARACTERISTICS:

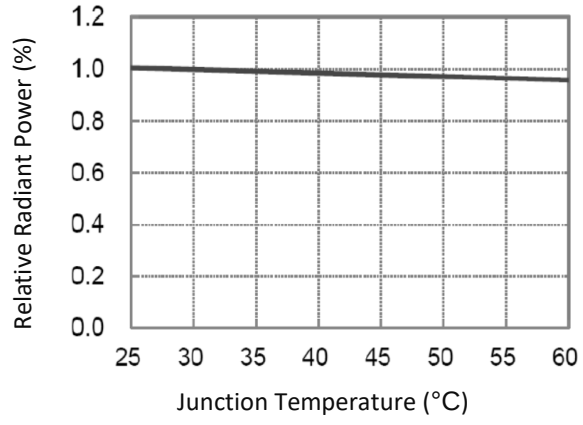
Relative Power v.s. Forward Current



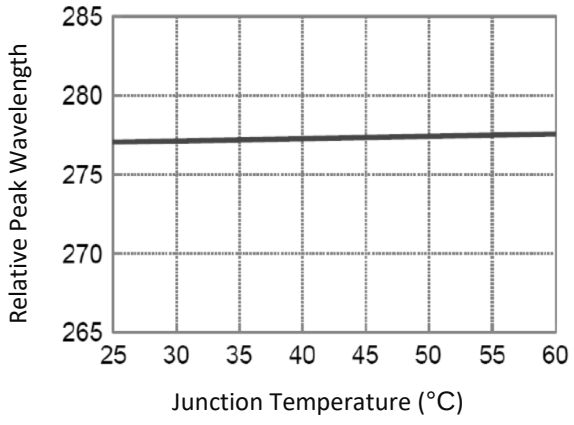
Forward Current v.s. Forward Voltage



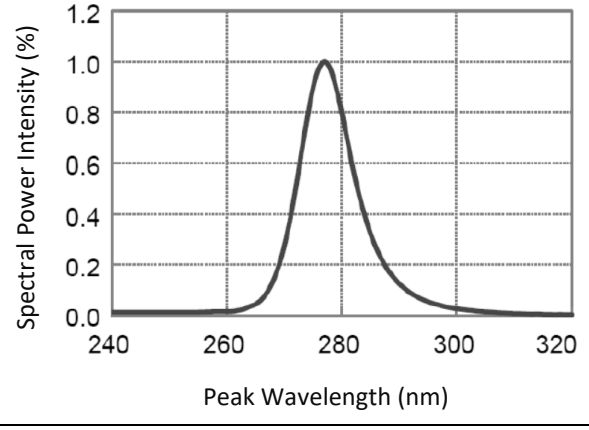
Relative Power v.s. Junction Temperature Tj



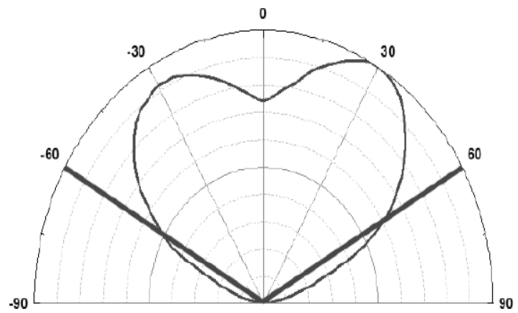
Forward Current v.s. Peak Wavelength



Relative Spectral Power Distribution



Directive Radiation



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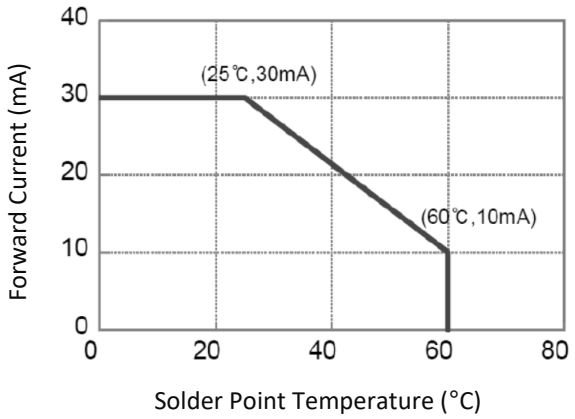
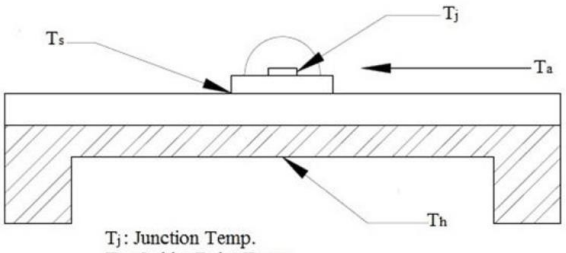
ELECTRO-OPTICAL CHARACTERISTICS:

Thermal Design for De-rating





T_j : Junction Temp.
T_s : Solder Point Temp.
T_h : Heat Sink Temp.
T_a : Ambient Temp.
$R_{th(j-s)}$: Thermal Resistance from point " T_j " to point " T_s "

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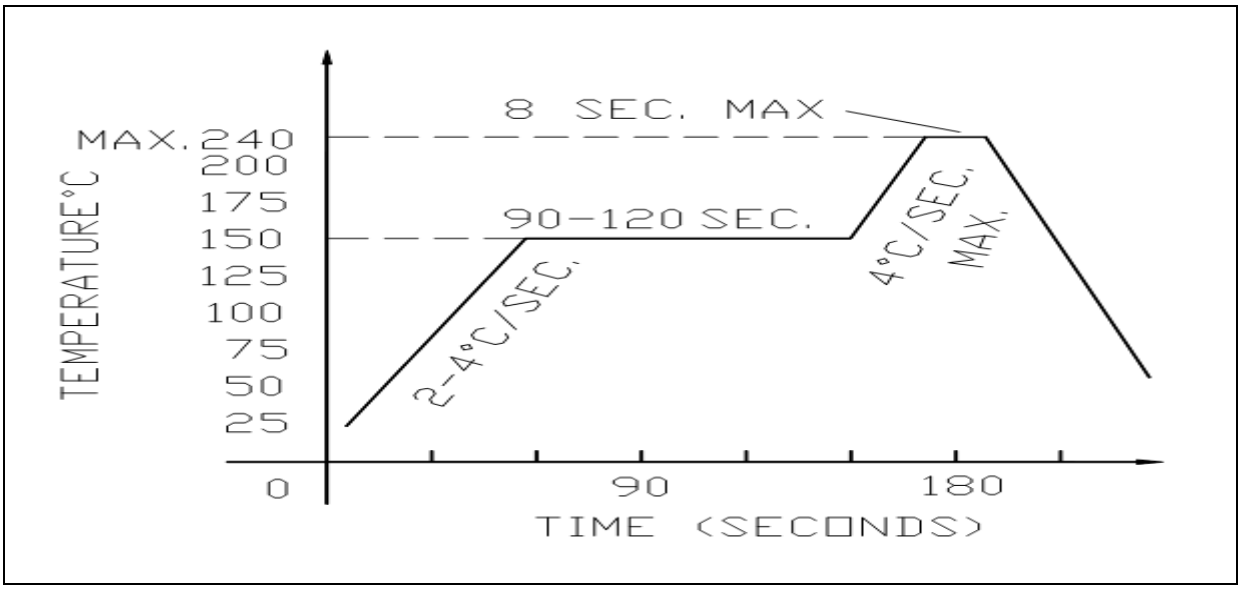
RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



Note:

1. Maximum reflow soldering: 2 times.
2. Recommended reflow temperature 240°C. Maximum soldering temperature should be limited to 245°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

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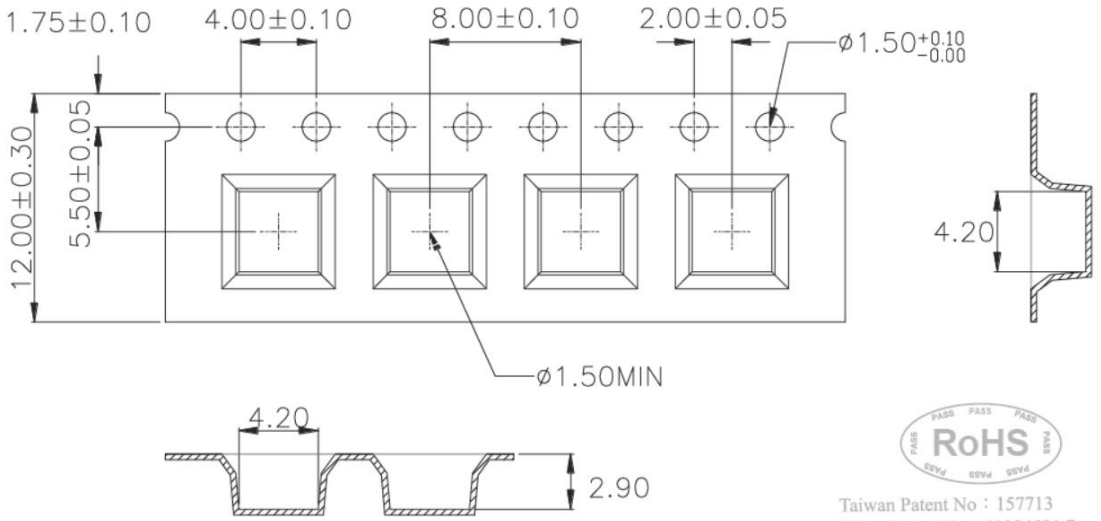
PACKING SPECIFICATION:

Reel Dimension:

Min.100pcs/reel



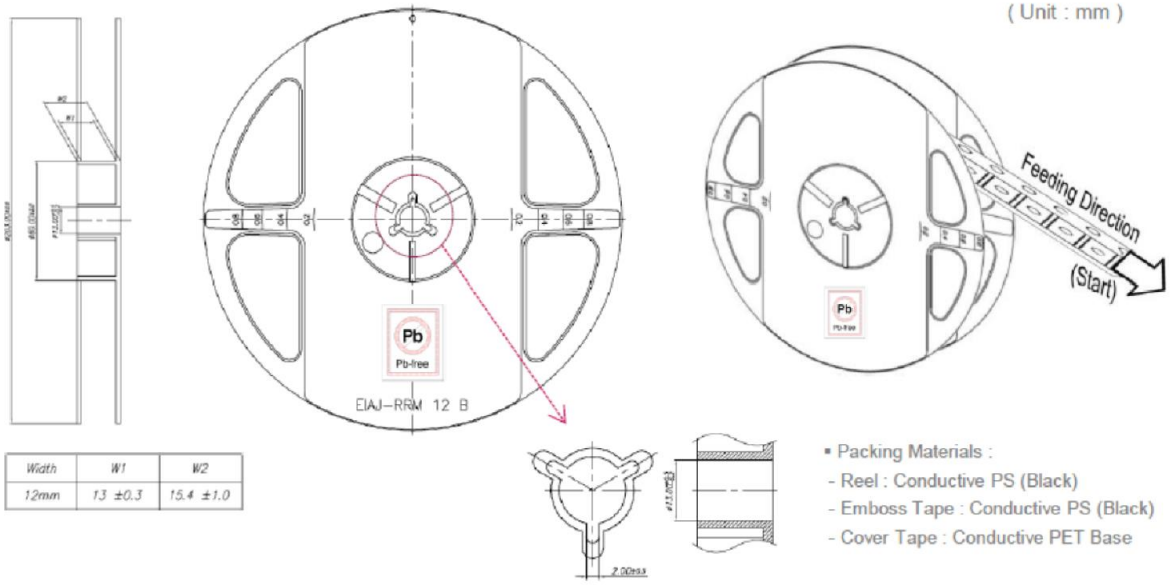
RoHS

Taiwan Patent No：157713
China Patent No：01224591.7

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.
6. Packing length per 22 " reel : 62.5 Meters(1:3).
7. Component load per 13" reel : 2500 pcs.

W	12.00±0.30
A0	4.20±0.10
B0	4.20±0.10
K0	2.90±0.10

(Unit : mm)



Width	W1	W2
12mm	13 ±0.3	15.4 ±1.0

- Packing Materials :
- Reel : Conductive PS (Black)
- Emboss Tape : Conductive PS (Black)
- Cover Tape : Conductive PET Base

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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.

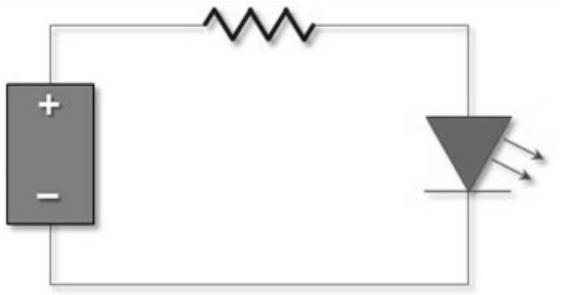
Baking:

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 12hrs 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.

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REVISION RECORD:

Version	Date	Summary of Revision
A1.0	11/09/2020	Datasheet set-up.

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