



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
- ▶ 5252 Duo Whites
- ▶ Cool White / Warm White

NOD14S29



Release Date: 10 September 2020 Version: A1.1



5252 Duo Whites

RoHS
Compliant



FEATURES (Cool White / Warm White):

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350/350mA*
- **Forward Voltage (typ.):** 6.5/6.5V
- **Luminous Flux (typ.):** 190/160lm@350mA
- **Colour:** Cool White / Warm White
- **Colour Temperature CCT:** 5700/3000K
- **Viewing angle:** 135/135°
- **Materials:**
 - Die: InGaN/InGaN
 - Resin: Silicon (Water Clear)
- **Operating Temperature:** -30~+80°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Chromaticity
- **Soldering methods:** IR Reflow soldering
- **Preconditioning:** MSL 2 according to J-STD020
- **Packing:** 12mm tape with max.500pcs/reel, ø180mm (7")

* In the order of Cool White / Warm White.

APPLICATIONS:

- Decoration Lighting
- Wall Washer
- Spot Light
- Outdoor Lighting
- Architectural Lighting
- Industrial Lighting
- Portable Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

| Parameter | Symbol | Ratings | Unit |
|--|------------------|-----------|------|
| Maximum Forward Current | I _{MAX} | 700/700* | mA |
| Pulse Forward Current (D=0.01s; duty 1/10) | I _{PF} | 1000/1000 | mA |
| Reverse Voltage | V _R | -5 | V |
| Reverse Current @5V | I _R | 10 | μA |
| Thermal Resistance | R _{TH} | 3 | °C/W |
| Soldering Temperature | T _{SOL} | 260 | °C |
| Operating Temperature | T _{OPR} | -30~+80 | °C |
| Storage Temperature | T _{STG} | -40~+100 | °C |

- * In the order of Cool White / Warm White.

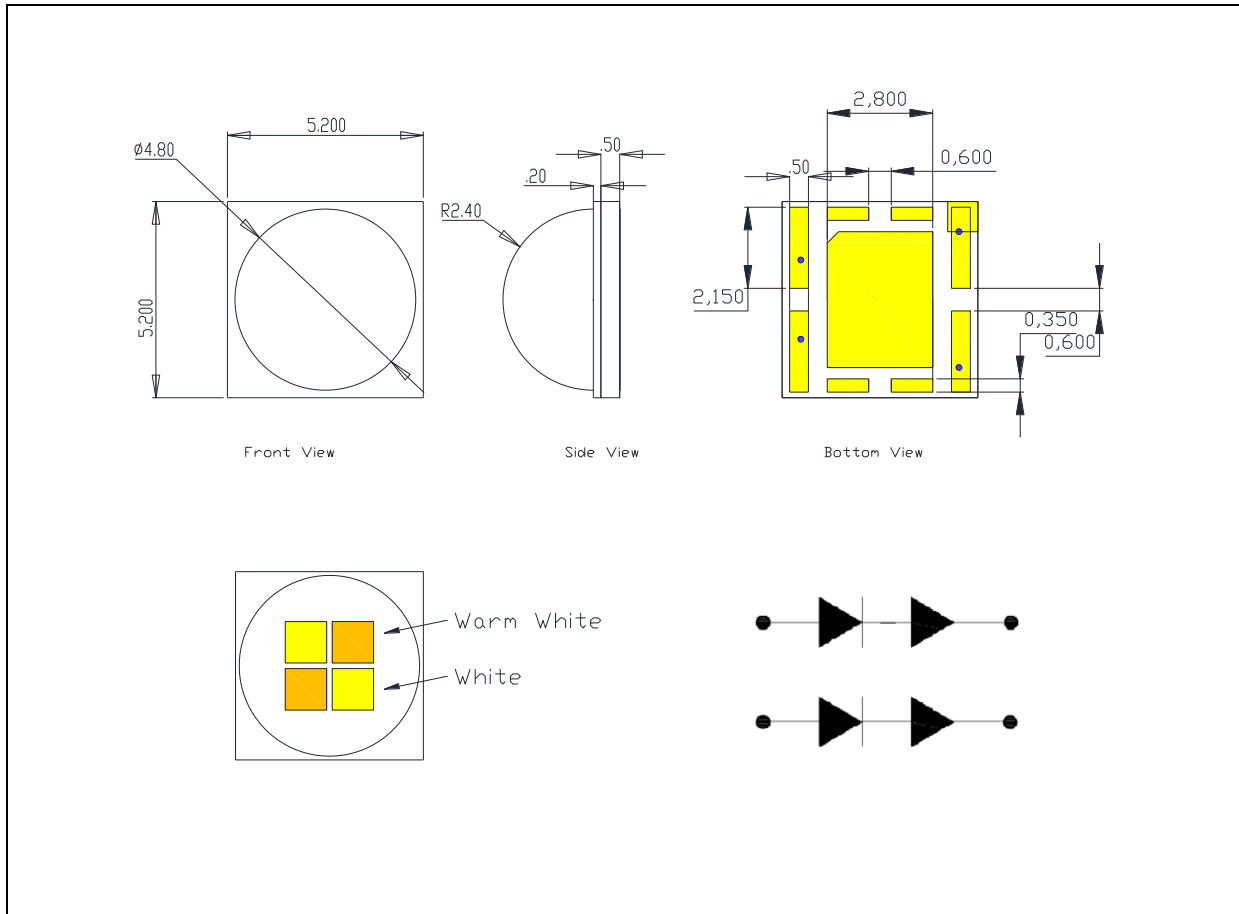
Electrical & Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Values | | | Unit | Test Condition |
|-------------------------------------|-------------------|--------|--------|------|------|-----------------------|
| | | Min. | Typ. | Max. | | |
| Cool White - Forward Voltage | V _F | 6.0 | 6.5 | 6.8 | V | I _F =350mA |
| Cool White - Luminous Flux | Φ _v | --- | 190 | --- | lm | I _F =350mA |
| | | --- | 380 | --- | | I _F =700mA |
| Cool White Chromaticity Coordinates | X | --- | 0.3287 | --- | --- | I _F =350mA |
| | Y | --- | 0.3417 | --- | | |
| Cool White - Wavelength | CCT | 5000 | 3700 | 8300 | K | I _F =350mA |
| Warm White - Forward Voltage | V _F | 6.0 | 6.5 | 6.8 | V | I _F =350mA |
| Warm White - Luminous Flux | Φ _v | --- | 160 | --- | lm | I _F =350mA |
| | | --- | 320 | --- | | I _F =700mA |
| Warm White Chromaticity Coordinates | X | --- | 0.4338 | --- | --- | I _F =350mA |
| | Y | --- | 0.4030 | --- | | |
| Warm White - Wavelength | W _p | 2580 | 3000 | 3220 | nm | I _F =350mA |
| Viewing Angle | 2θ _{1/2} | --- | 135 | --- | deg | I _F =350mA |

1. Luminous intensity (I_v) ±5%, Forward Voltage (V_F) ±0.1V, Viewing angle(2θ_{1/2}) ±5%

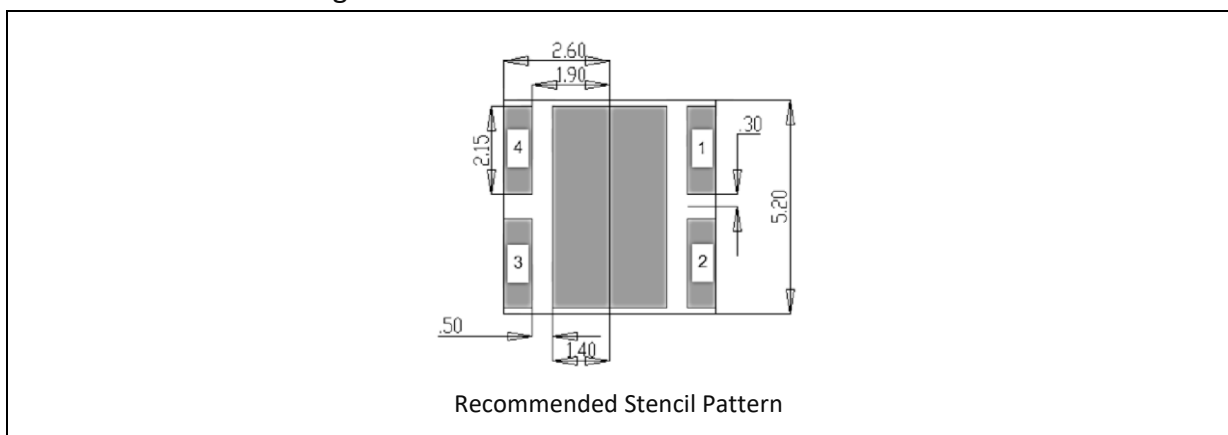
OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



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

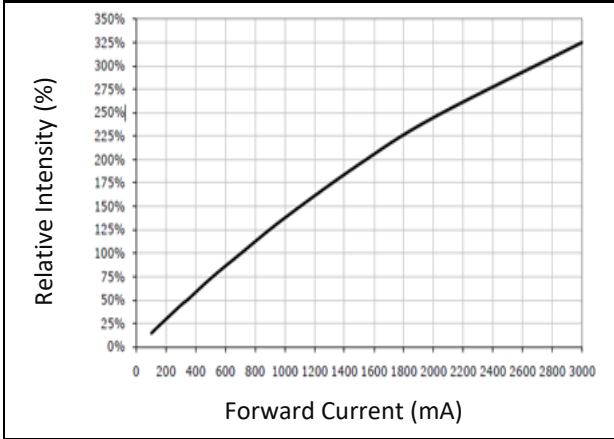
BINNING GROUPS:

Chromaticity ($I_F = 350/350\text{mA}$):

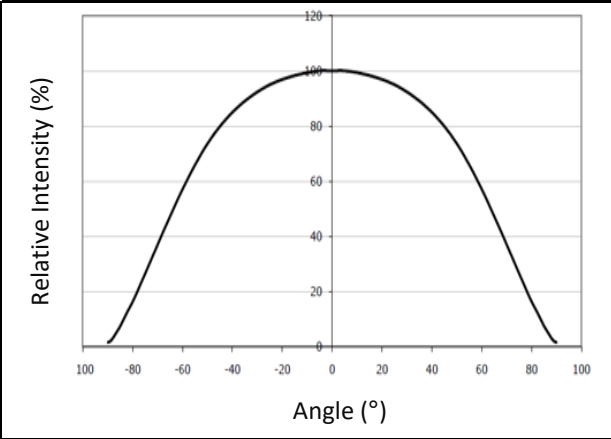
| | A | B | C |
|----|------------|------------|------------|
| CW | 5000~6000K | 6000~7000K | 7000~8300K |
| WW | 2580~2870K | 2870~3020K | 3020~3220K |

ELECTRO-OPTICAL CHARACTERISTICS:

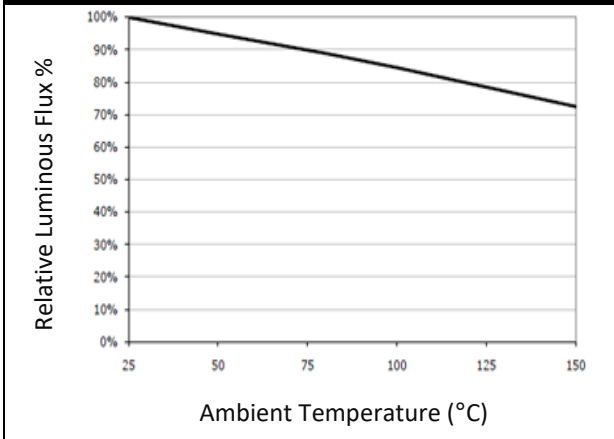
Relative Intensity v.s. Forward Current



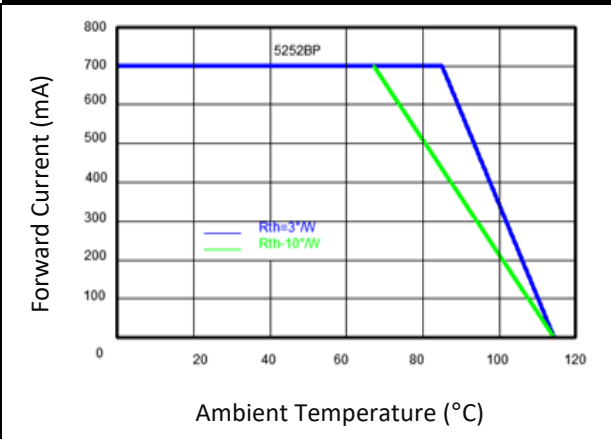
Directive Radiation



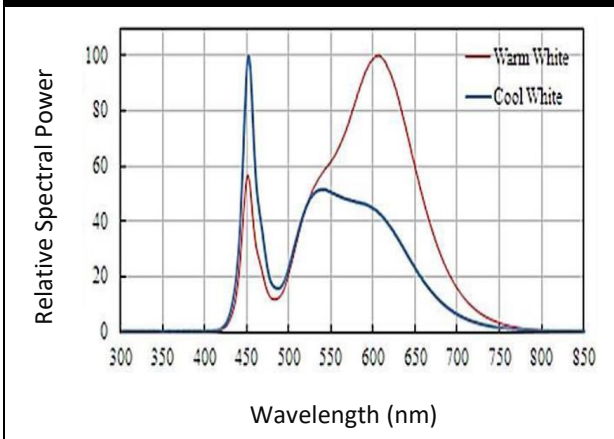
Relative Luminous Flux v.s. Ambient Temp.



Maximum Forward Current v.s. Ambient Temp.

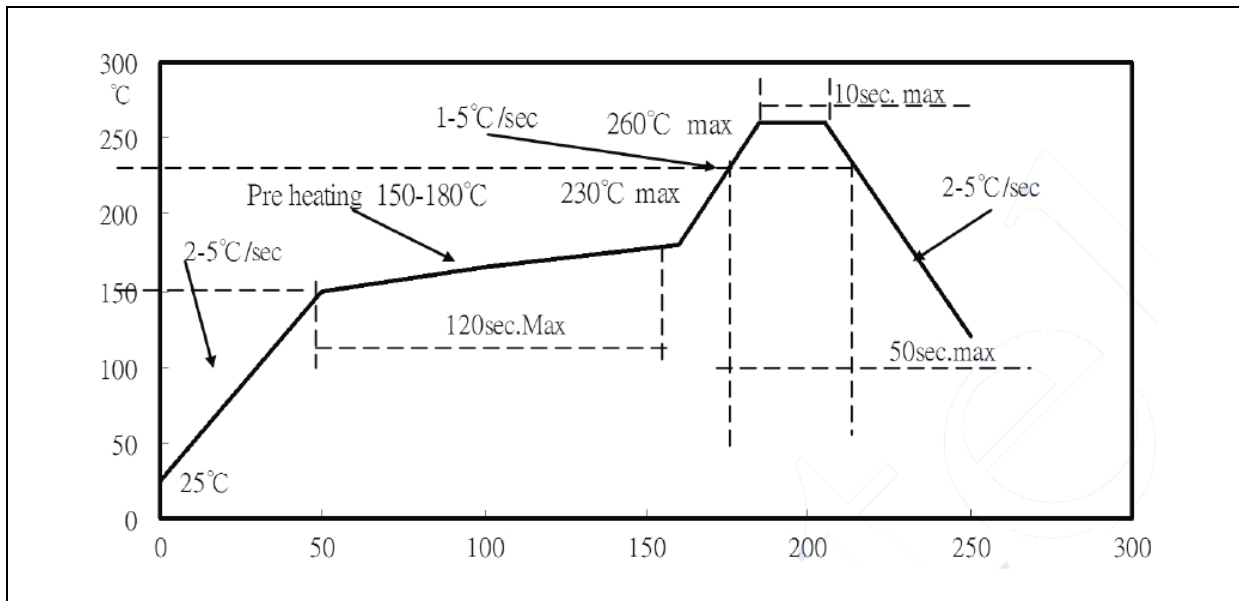


Relative Spectrum Power Distribution



RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

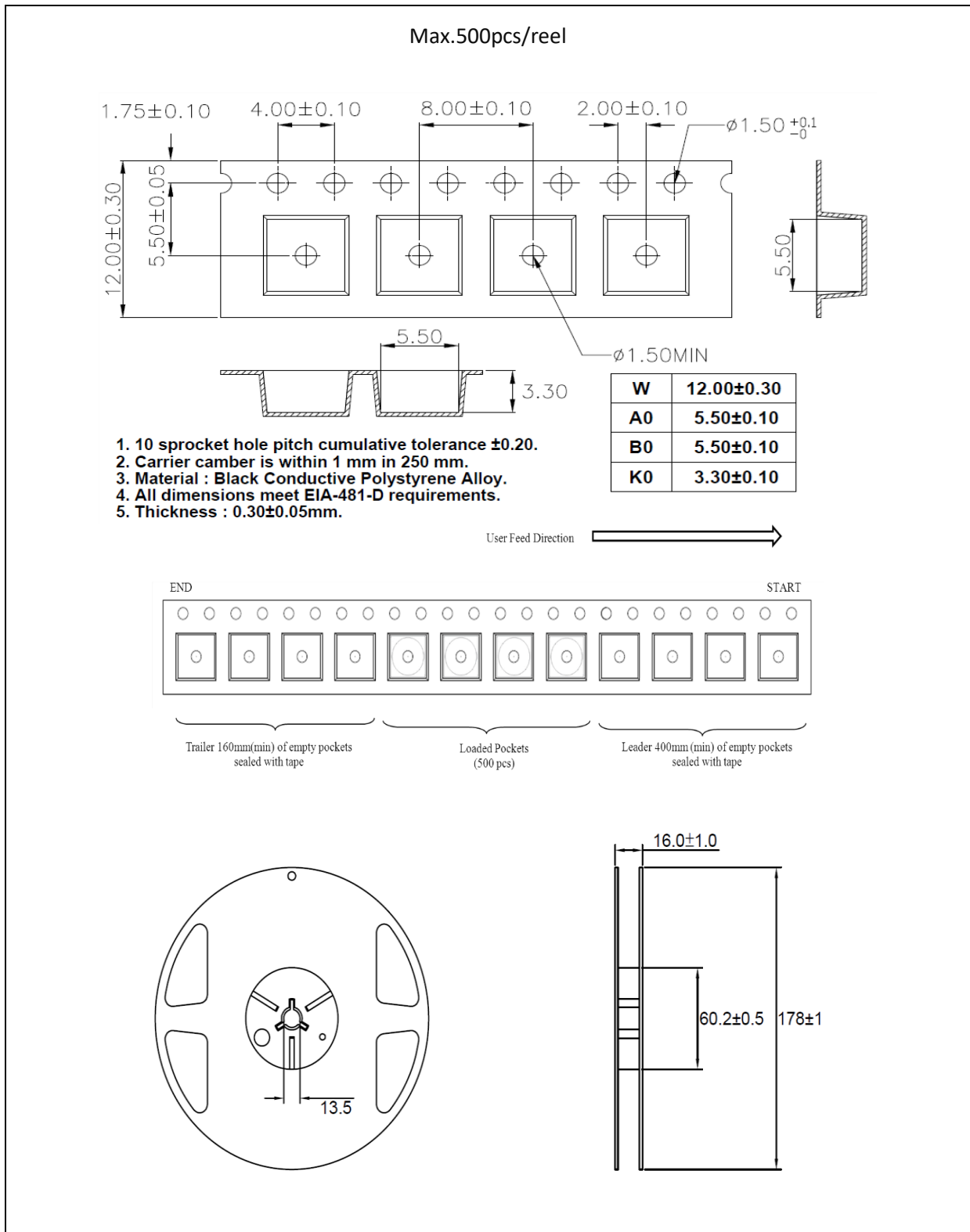


Note:

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

PACKING SPECIFICATION:

Reel Dimension:



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

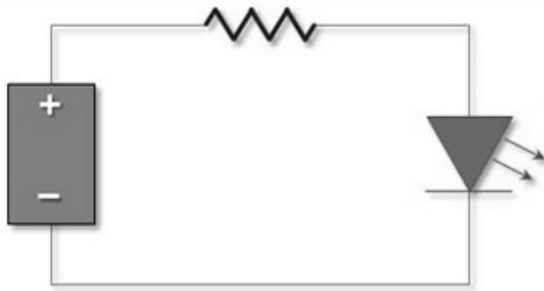
Baking:

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-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:

| Version | Date | Summary of Revision |
|---------|------------|---------------------|
| A1.0 | 27/10/2014 | Datasheet set-up. |
| A1.1 | 10/09/2020 | Revised drawing. |