



**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



- ▶ Subminiature SMD
- ▶ 2520 Series
- ▶ Blue (470nm)

# NOB08S15



Release Date: 13 November 2015 Version: A1.1



Subminiature 2520

## 2520 Series



### FEATURES:

- **Package:** Subminiature SMD
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 3.7V
- **Luminous Intensity (typ.):** 300mcd @20mA
- **Colour:** Blue
- **Wavelength:** 470nm
- **Viewing angle:** 20°
- **Materials:**
  - Die: InGaN
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -20~+80°C
- **Storage Temperature:** -30~+100°C
- **ESD:** 150V
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant Wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 12mm tape with 1500/reel, ø180mm (7")

### APPLICATIONS:

- Backlighting
- Indication Light
- Switch light
- Dashboard

## CHARACTERISTICS:

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

Parameter	Symbol	Ratings	Unit
Forward Current	$I_F$	30	mA
Peak Forward Current Duty 1/10@10KHz	$I_{FP}$	100	mA
Reverse Current @5V	$I_R$	50	$\mu$ A
Power Dissipation	PD	120	mW
Electrostatic Discharge	ESD	150	V
Operating Temperature	$T_{OPR}$	-20~+80	°C
Storage Temperature	$T_{STG}$	-30~+100	°C

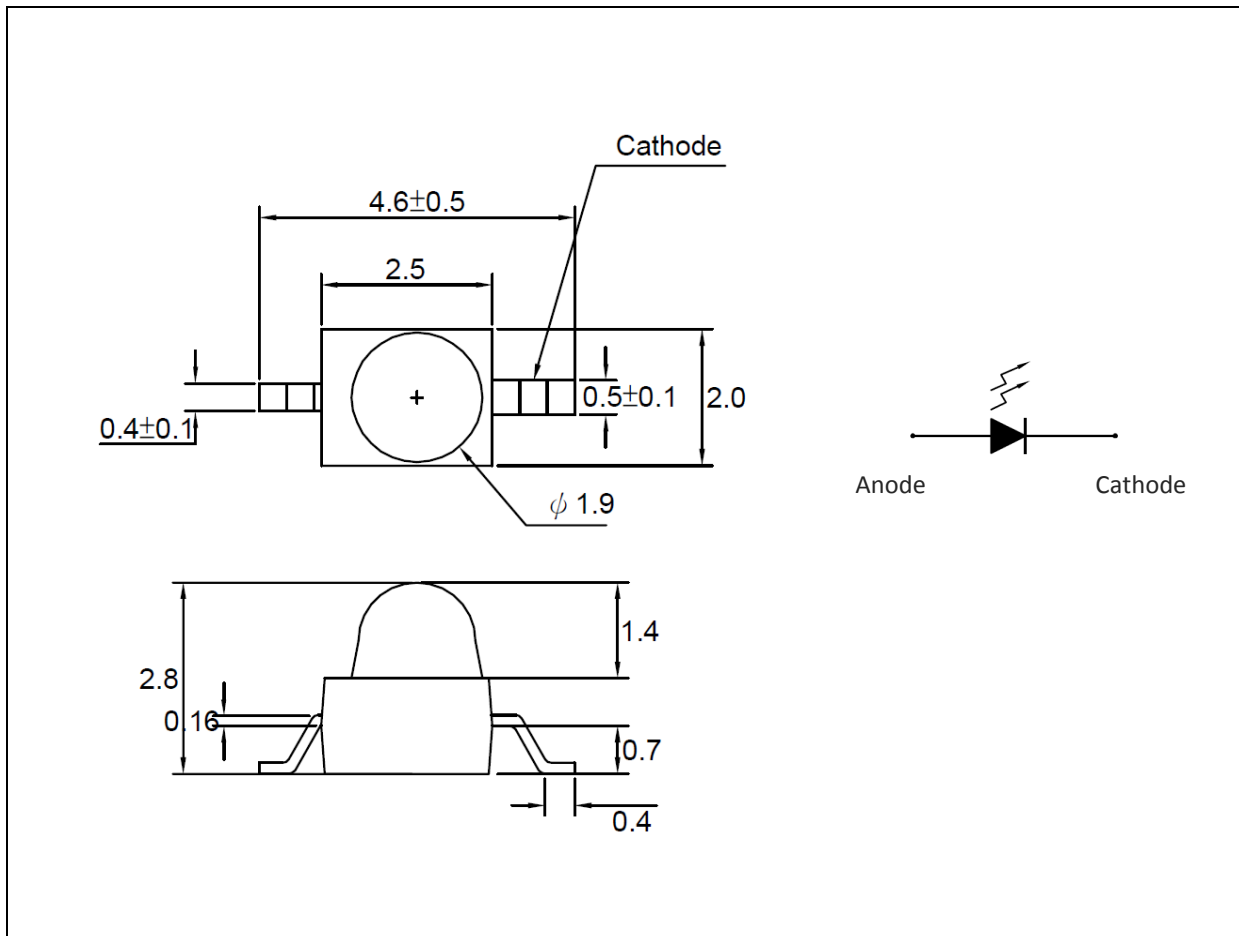
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	$V_F$	3.5	---	4.0	V	$I_F=20mA$
Luminous Intensity	$I_V$	160	300	---	mcd	$I_F=20mA$
Dominant Wavelength	$\lambda_D$	---	470	---	nm	$I_F=20mA$
Spectral Line Half Bandwidth	$\Delta \lambda$	---	30	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	20	---	deg	$I_F=20mA$

1. Luminous intensity ( $I_V$ )  $\pm 15\%$ , Forward Voltage ( $V_F$ )  $\pm 0.1V$ , Viewing angle( $2\theta_{1/2}$ )  $\pm 5\%$
2. IS standard testing

## OUTLINE DIMENSION:

Package Dimension:



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

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 20\text{mA}$ ):

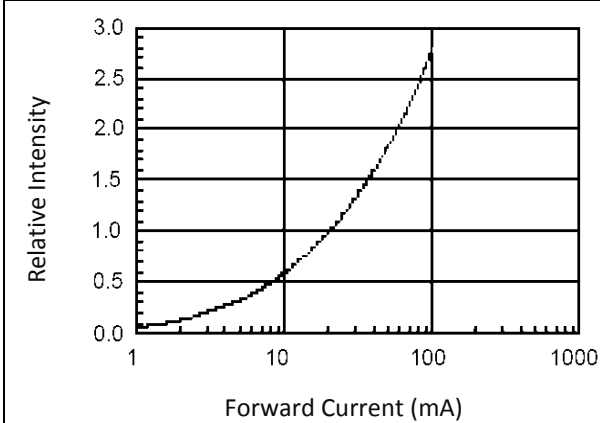
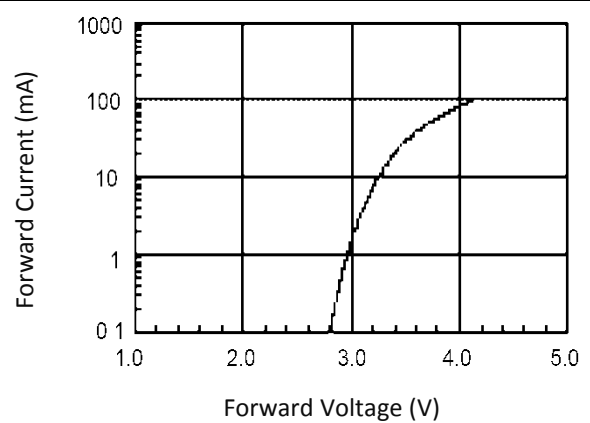
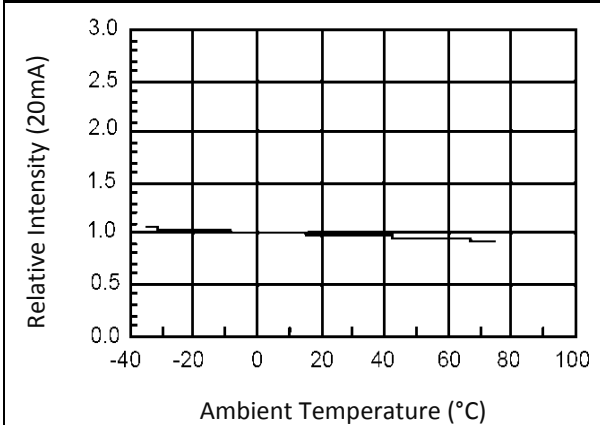
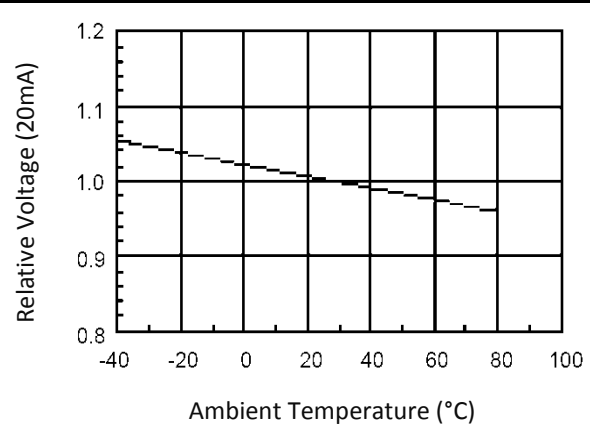
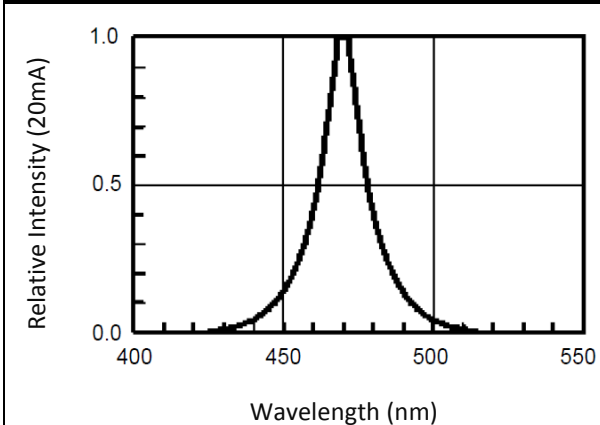
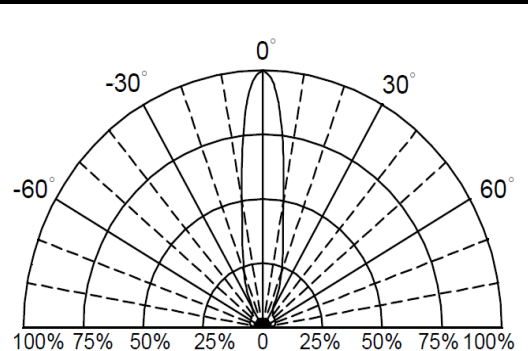
Code	Min.	Max.	Unit
1	3.4	3.5	V
2	3.5	3.6	
3	3.6	3.7	
4	3.7	3.9	
5	3.9	3.9	
6	3.9	4.0	

 Luminous Intensity Classifications ( $I_F = 20\text{mA}$ ):

Code	Min.	Max.	Unit
B1	160	200	mcd
B2	200	300	
B3	300	400	
B4	400	500	

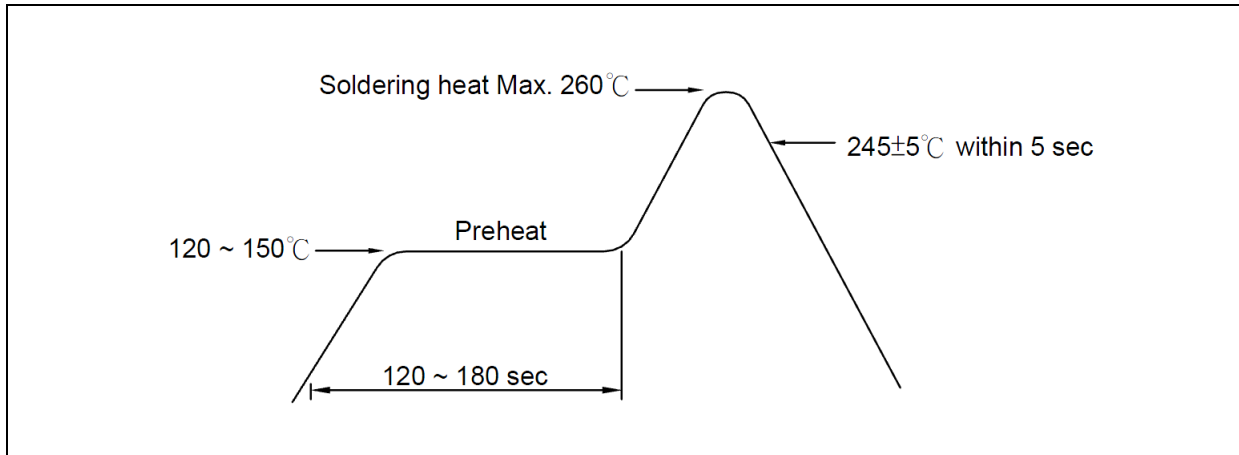
 Dominant Wavelength Classifications ( $I_F = 20\text{mA}$ ):

Code	Min.	Max.	Unit
27	460	465	nm
28	465	470	
29	470	475	
30	475	480	

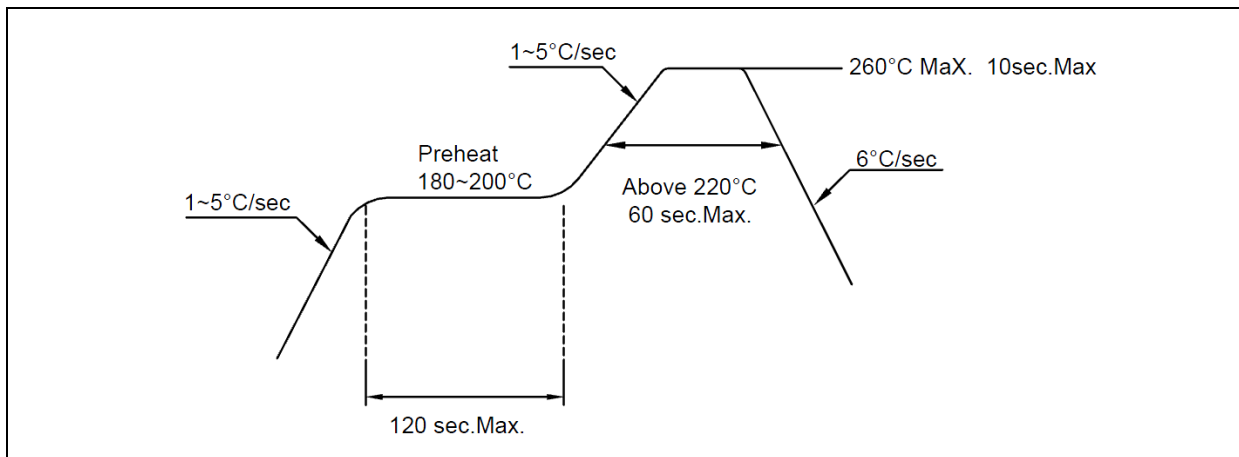
**ELECTRO-OPTICAL CHARACTERISTICS:**
**Relative Intensity v.s. Forward Current**

**Forward Current v.s. Forward Voltage**

**Relative Intensity v.s. Temperature**

**Relative Forward Voltage v.s. Temperature**

**Relative Intensity v.s. Wavelength**

**Directive Radiation**


## RECOMMENDED SOLDERING PROFILE:

Wave Solder:



Lead-free Solder:

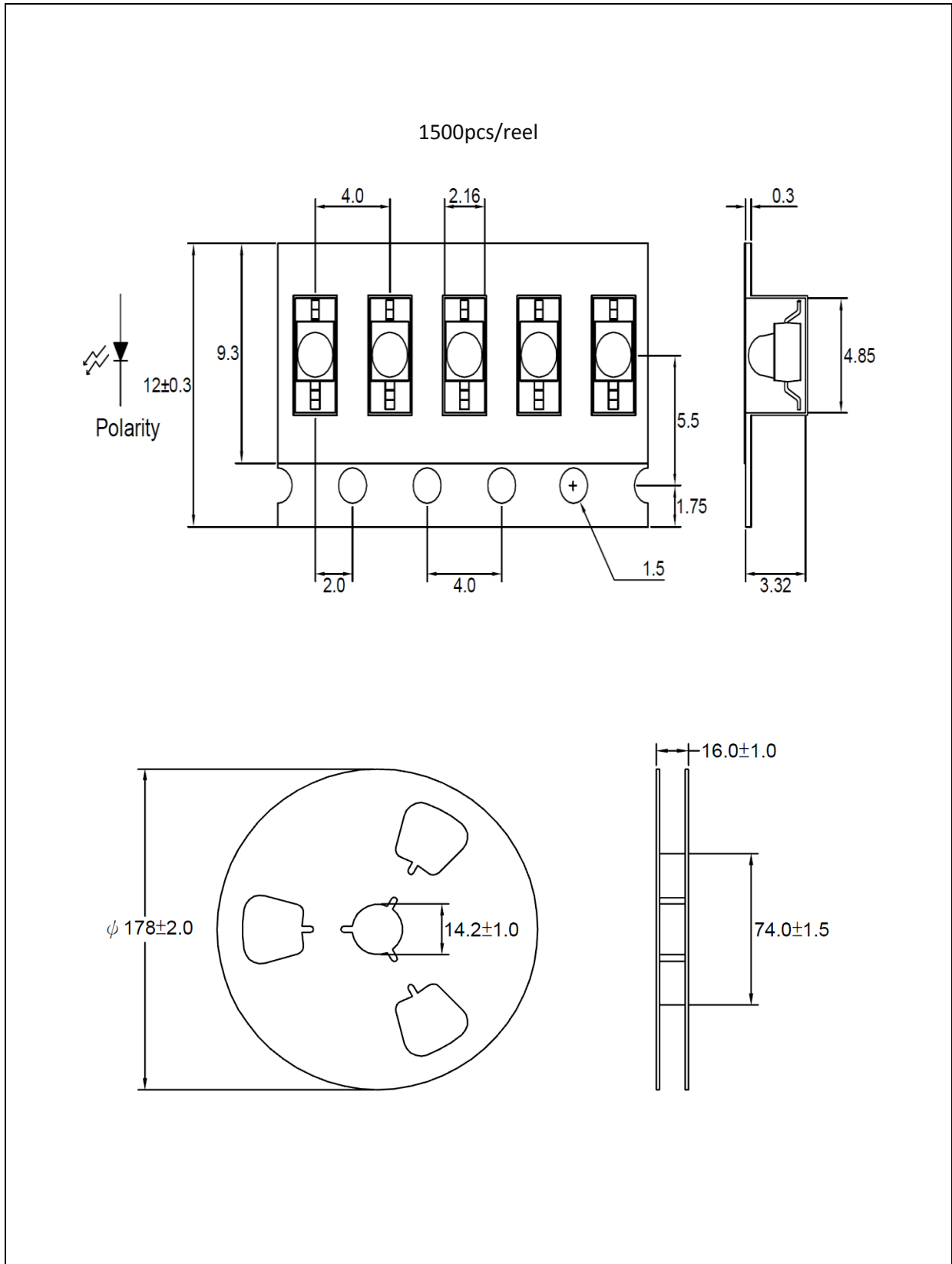


Note:

1. Maximum reflow soldering: 2 times.
2. 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 month 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 and apply baking at 60°C±5°C for 15hrs before use.

### Baking:

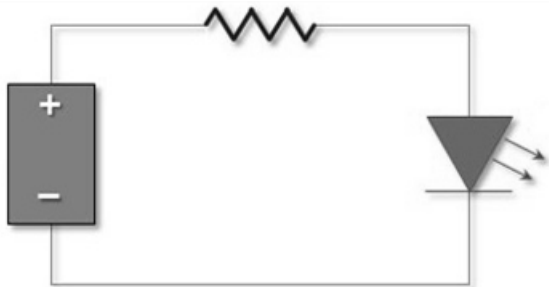
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

The suggested baking conditions are as followings:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) 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	15/04/2014	Datasheet set-up.
A1.1	13/11/2015	Part number change.