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BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009



BSI



BSI EM ISO 14001:2004



QC 900000



IECQ HSP18

PRODUCT DATASHEET

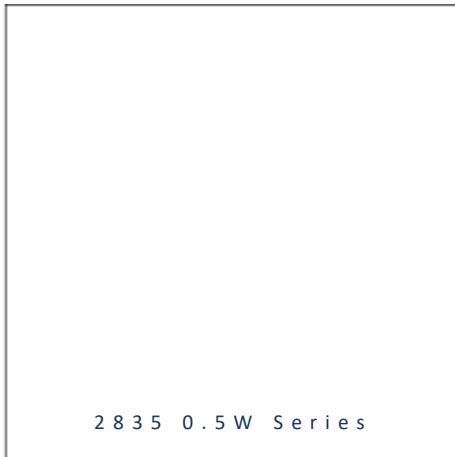


- ▶ PLCC2 SMD
- ▶ 2835 0.5W Series
- ▶ Blue (455nm)

NOB16S13



Release Date: 11 September 2023 Version: A1.1



2835 0.5W Series



FEATURES:

- **Package:** PLCC2 Mid Power Top View SMT Package
- **Forward Current:** 150mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Intensity (typ.):** 5lm@150mA
- **Colour:** Blue
- **Dominant Wavelength (typ.):** 455nm
- **Viewing Angle:** 120°
- **Materials:**
 - Die: InGaN
 - Resin: Silicon (Water Clear)
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping Parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant wavelength
- **Soldering Methods:** IR Reflow
- **MSL Level:** acc. to JEDEC Level 3
- **Packing:** 12mm tape with max.2000/reel, ø180mm (7")

APPLICATIONS:

- Decorative Lighting
- Backlighting
- Indicator
- Display

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I _F	150	mA
Peak Forward Current (Duty 1/10; width 10KHz)	I _{FP}	300	mA
Reverse Current @5V	I _R	50	μA
Power Dissipation	P _D	540	mW
Electrostatic Discharge	ESD	500	V
Junction Temperature	T _J	125	°C
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+100	°C

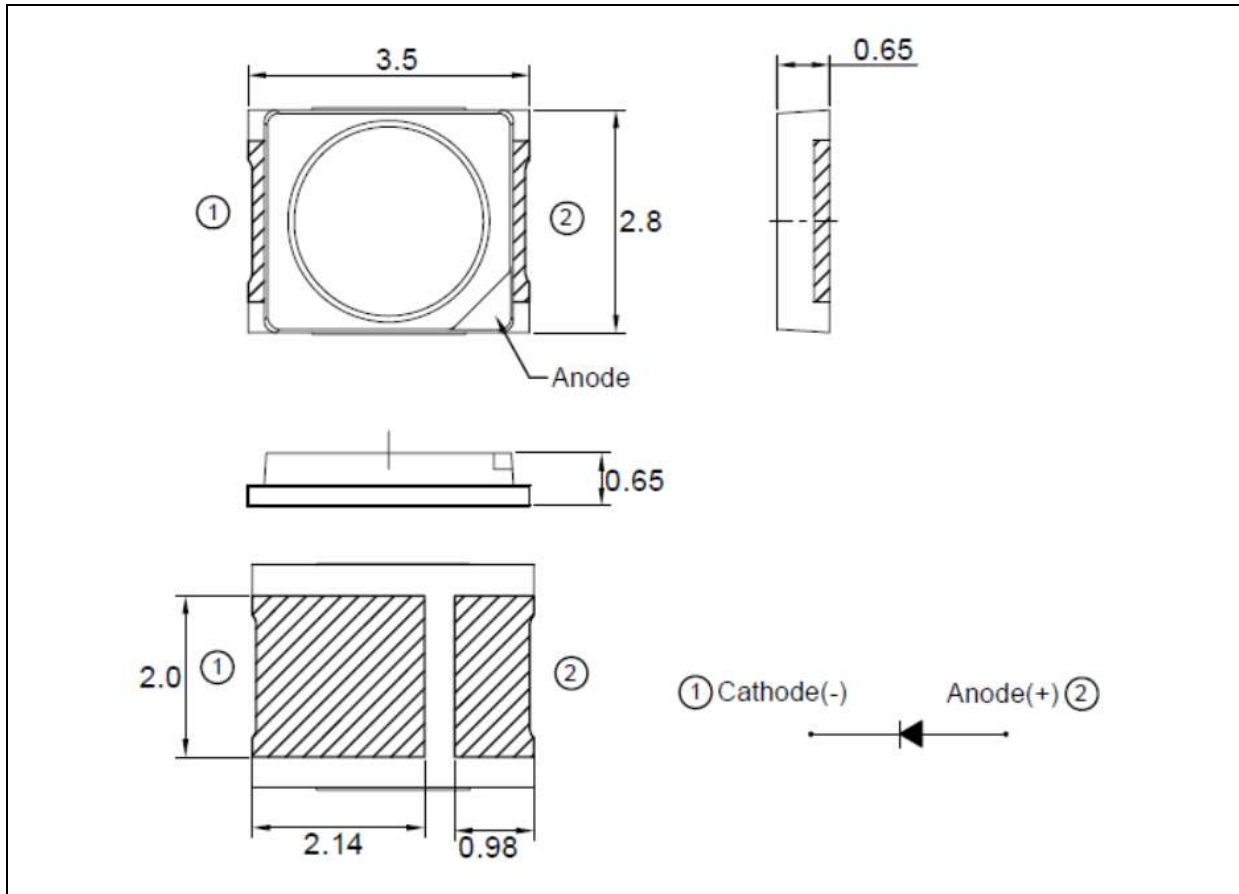
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.8	---	3.6	V	I _F =150mA
Luminous Intensity	I _v	4	5	---	lm	I _F =150mA
Dominant Wavelength	λ _D	---	455	---	nm	I _F =150mA
Spectral Half Width	Δλ	---	30	---	nm	I _F =150mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =150mA

1. Luminous intensity (I_v) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle(2θ_{1/2}) ±5%, Wavelength (λ_D) ±1nm

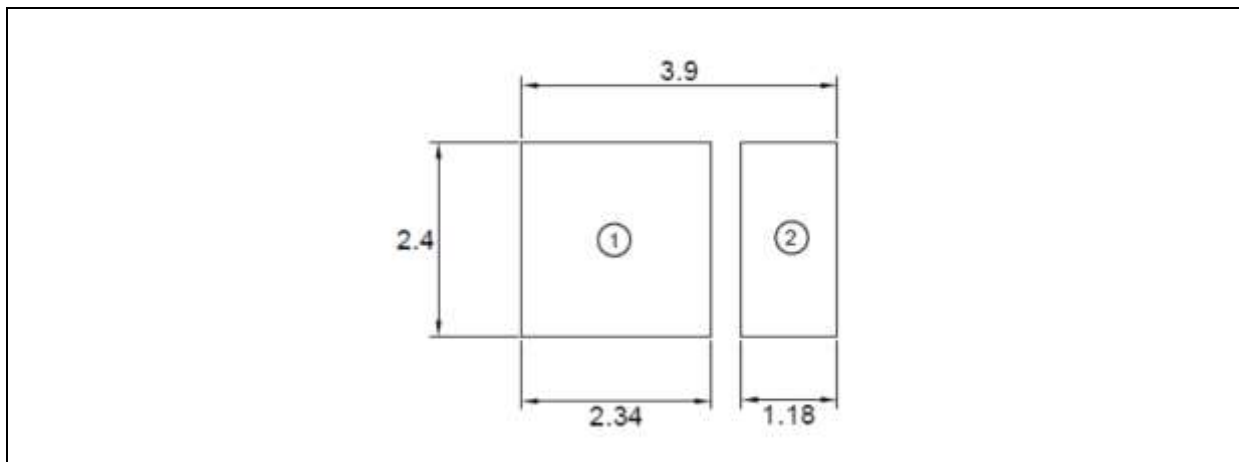
OUTLINE DIMENSION:

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 $\pm 0.5^\circ$.

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 150\text{mA}$):

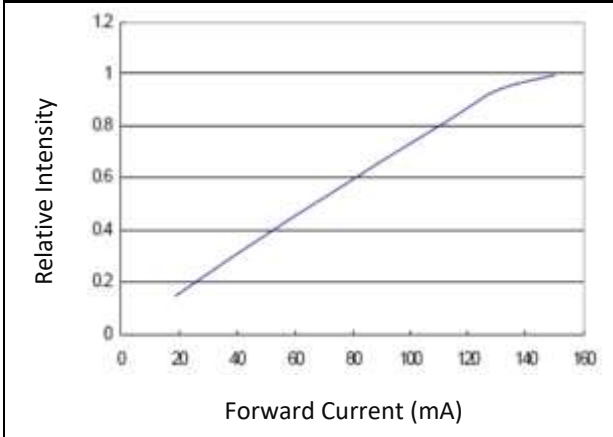
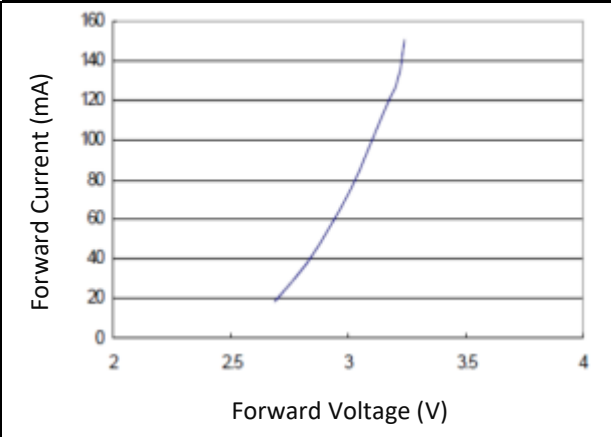
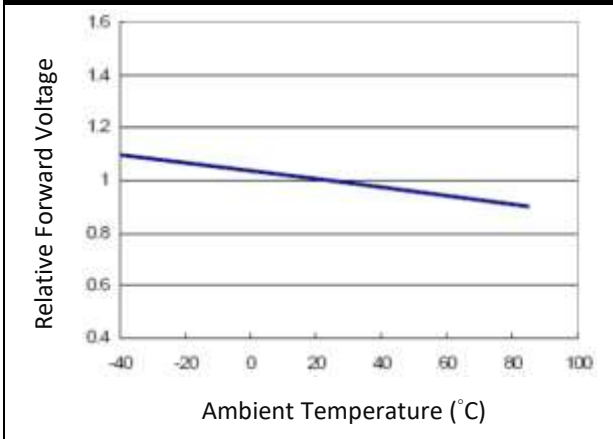
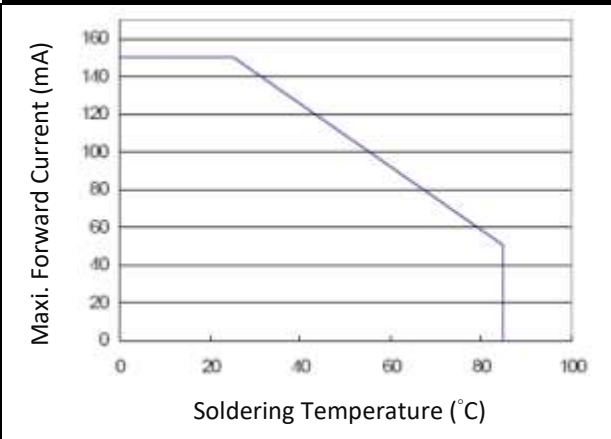
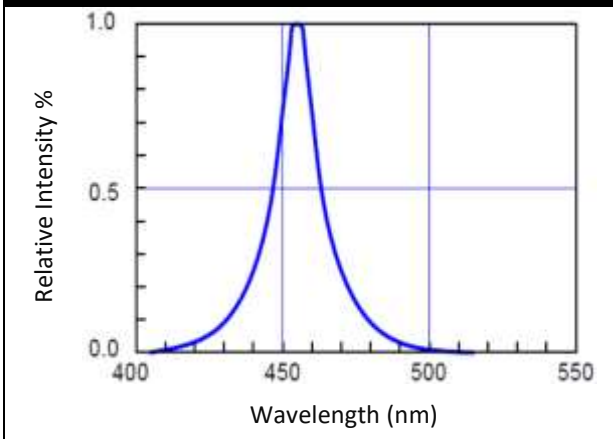
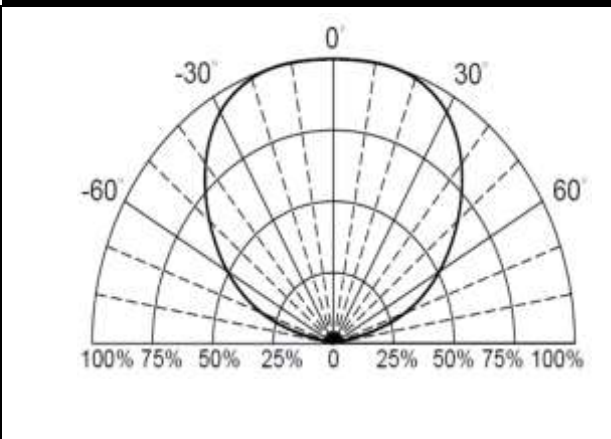
Code	Min.	Max.	Unit
1	2.8	3.0	V
2	3.0	3.2	
3	3.2	3.4	
4	3.4	3.6	

 Luminous Intensity Classifications ($I_F = 150\text{mA}$):

Code	Min.	Max.	Unit
F4	4	5	lm
F5	5	6	
F6	6	7	
F7	7	8	

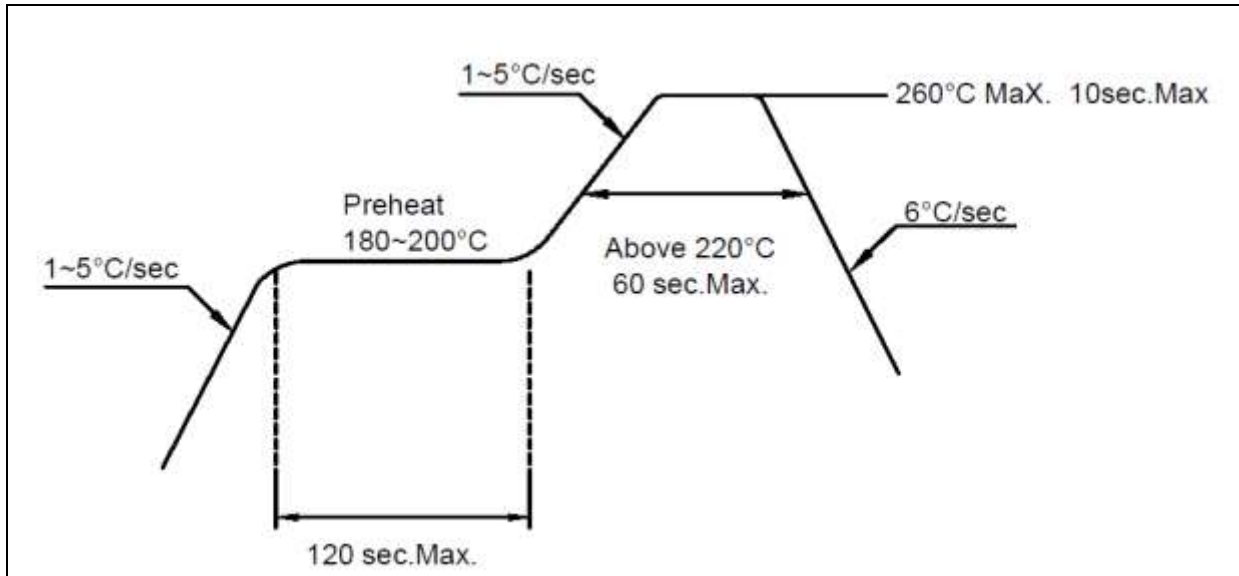
 Dominant Wavelength Classifications ($I_F = 150\text{mA}$):

Code	Min.	Max.	Unit
OJ	447	450	nm
OI	450	453	
OH	453	456	
OG	456	459	

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

Forward Voltage v.s. Forward Current

Relative Voltage v.s. Temperature

Max. Current Derating Chart

Relative Intensity v.s. Wavelength

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

IR Reflow Lead-free Solder:

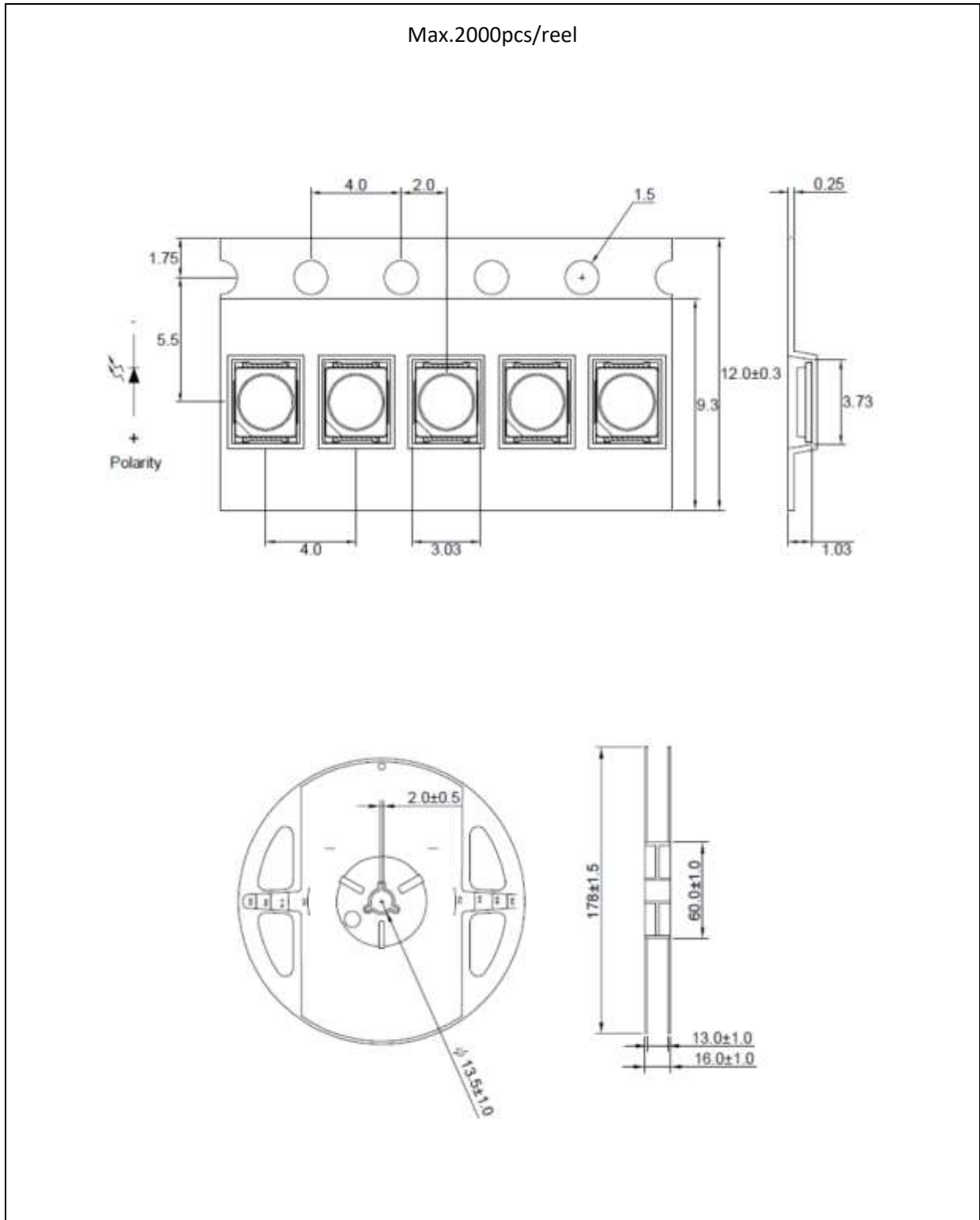


Note:

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

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±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:

Version	Date	Summary of Revision
A1.0	11/08/2015	Datasheet set-up.
A1.1	11/09/2023	Update characteristics charts.