BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

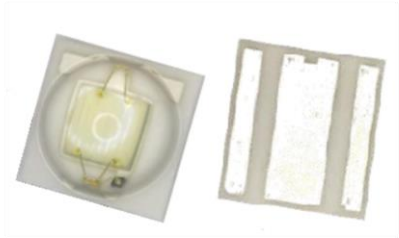
PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- ► Ceramic High Power
- ► 3535 2.22t Series
- ► Blue (450~460nm)

Release Date: 25 July 2018 Version: A1.5

N0B09S84Z



3535 2.22t Series

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RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Flux (typ.):** 16lm@350mA
- **Colour:** Blue
- **Wavelength:** 450~460nm
- **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 Flux
  - Dominant Wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 12mm tape with Min.100pcs /reel, ø180mm (7'')

APPLICATIONS:

- Plant Growing Light
- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	700	mA
Pulse Forward Current D=0.01S; duty 1/10	I_{PF}	1000	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Junction Temperature	T_j	150	°C
Electrostatic Discharge (HBM: MIL-STD-883 C 3B)	ESD	8000	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C
Soldering Temperature	T_{SOL}	250	°C

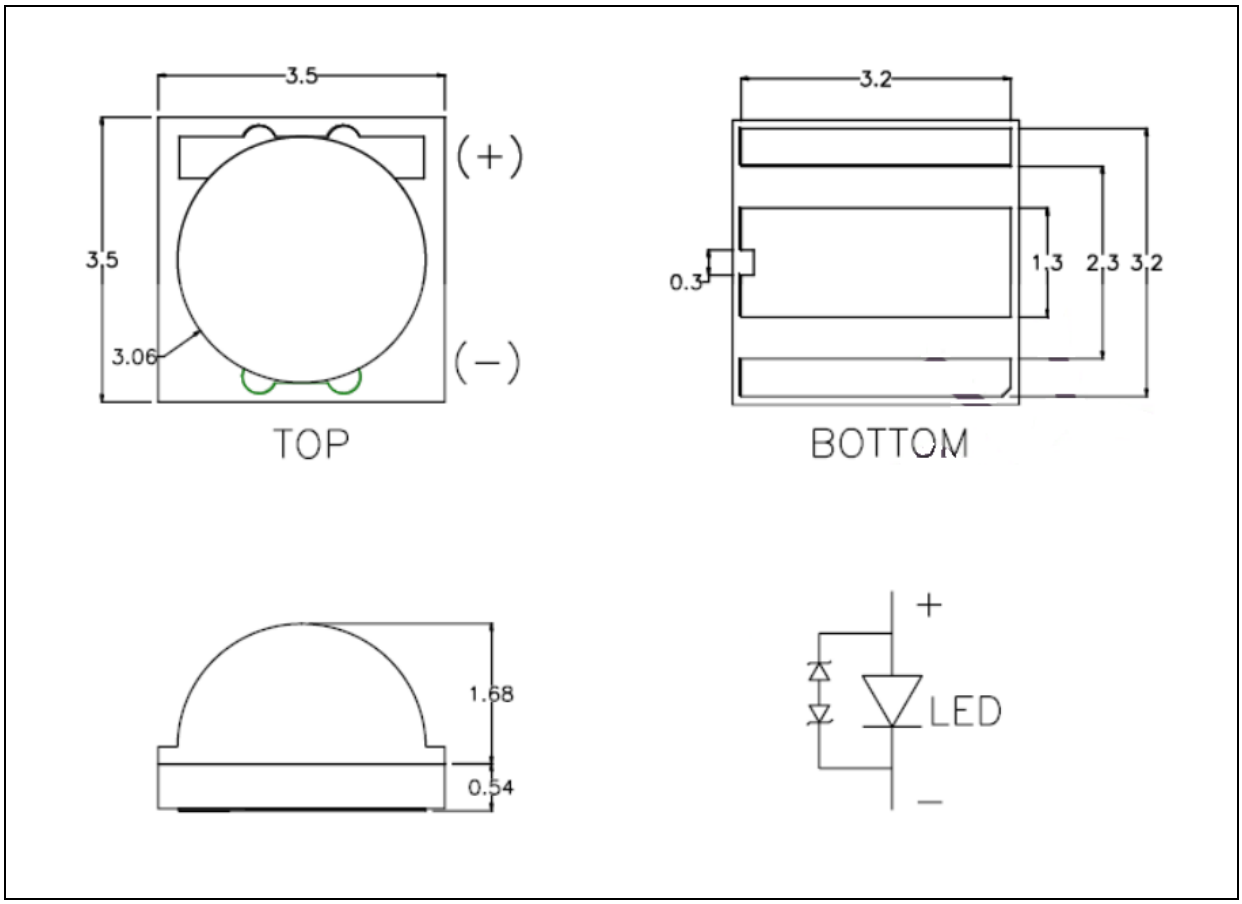
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	---	3.6	V	I_F=350mA
Luminous Flux	Φ_V	14	16	18	lm	I_F=350mA
Dominant Wavelength	λ_D	450	---	460	nm	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=350mA

1. Luminous flux (Φ_V) ±7%, Forward Voltage (V_F) ±0.05V, Viewing angle($2\theta_{1/2}$) ±10°
2. IS standard testing

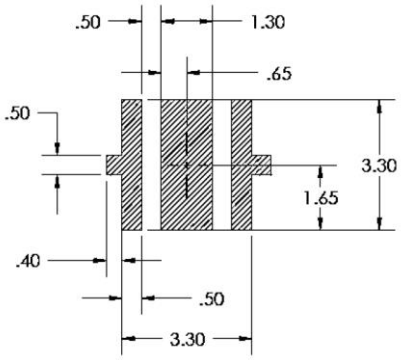
OUTLINE DIMENSION:

Package Dimension:

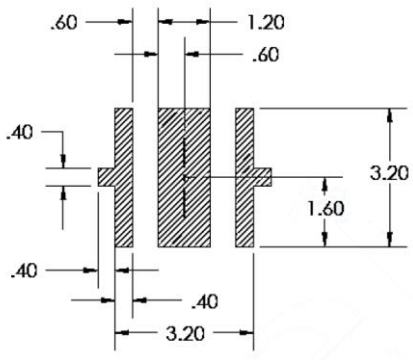


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad



Recommended Stencil Pattern

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

BINNING GROUPS:

Forward Voltage Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
V2830	2.8	3.0	V
V3032	3.0	3.2	
V3234	3.2	3.4	
V3436	3.4	3.6	

Luminous Flux Classifications (I_F = 350mA):

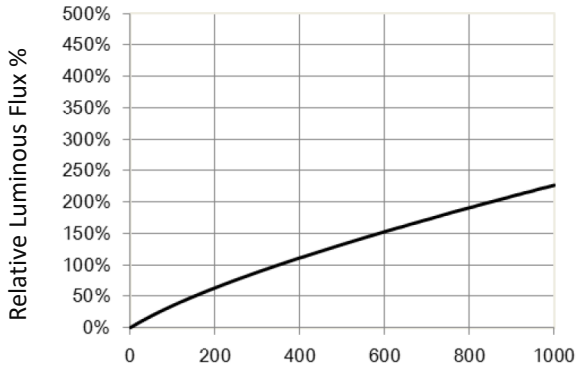
Code	Min.	Max.	Unit
B13	14	16	lm
B14	16	18	

Dominant Wavelength Classifications (I_F = 350mA):

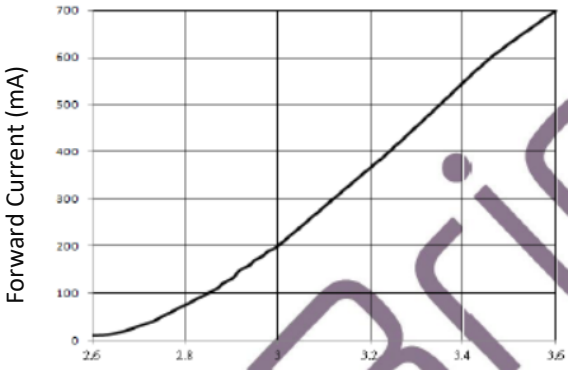
Code	Min.	Max.	Unit
B450	450	455	nm
B455	455	460	

ELECTRO-OPTICAL CHARACTERISTICS:

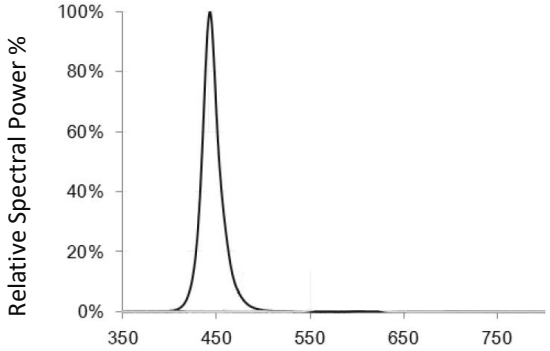
Relative Luminous Flux v.s. Forward Current



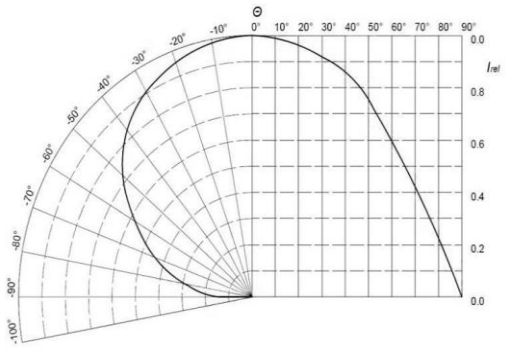
Forward Current v.s. Forward Voltage



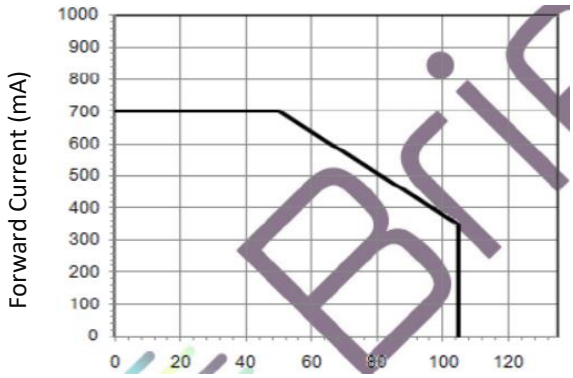
Relative Spectral Power v.s. Wavelength

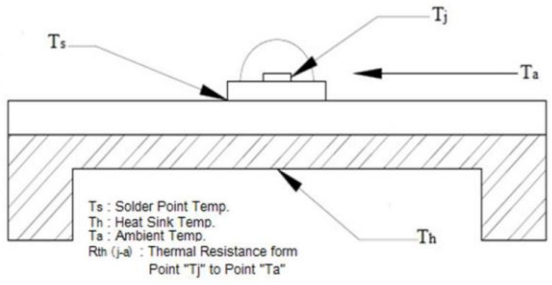


Directive Radiation



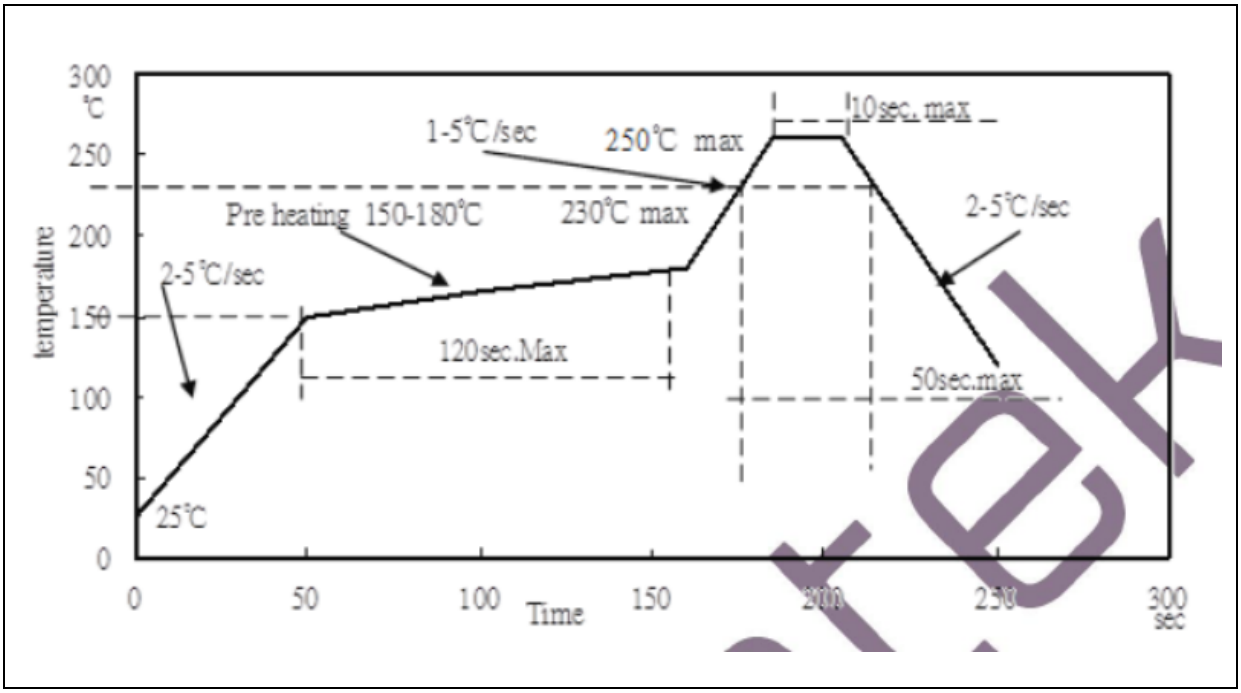
Forward Current Derating Curve





RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

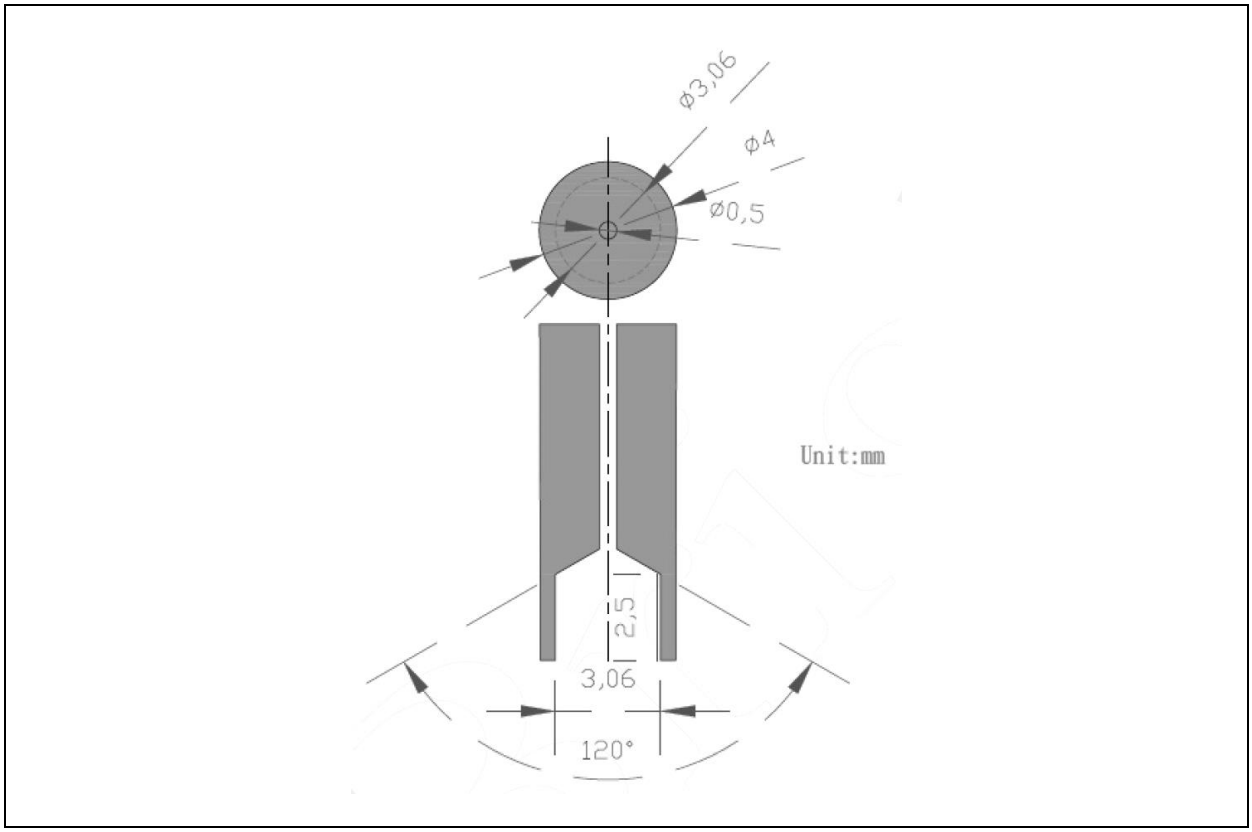


Note:

1. Maximum reflow soldering: 3 times.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 250°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

RECOMMENDED NOZZLE FOR SMT:

Recommended Pick & Place Nozzle:

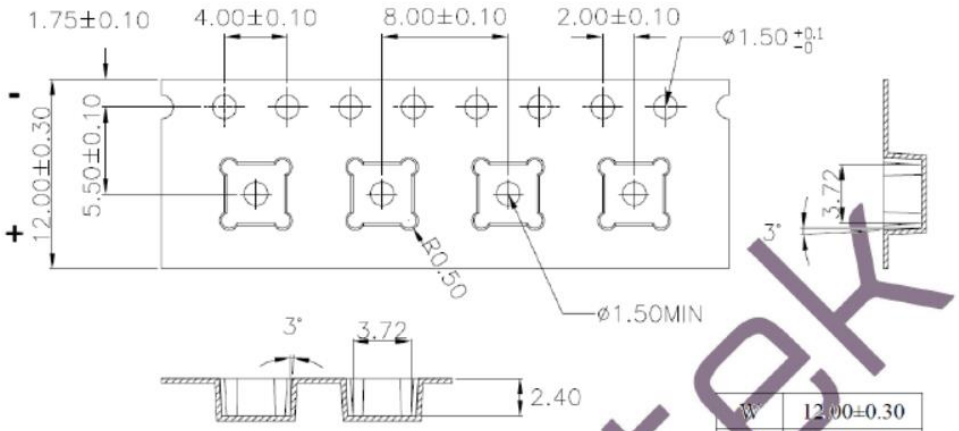


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.1mm, unless otherwise noted.

PACKING SPECIFICATION:

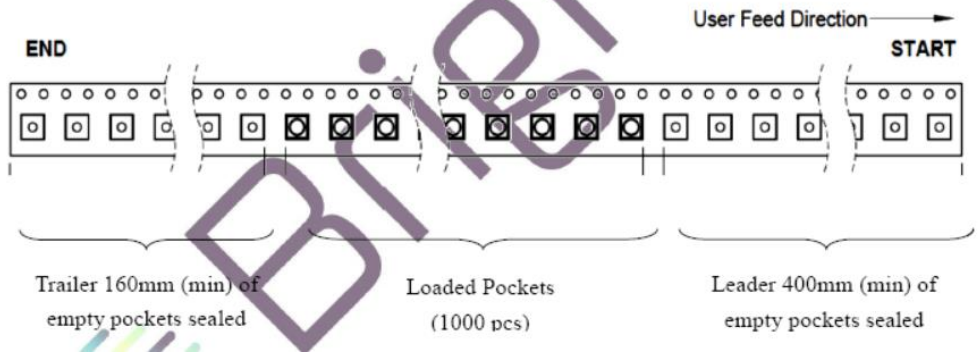
Reel Dimension:

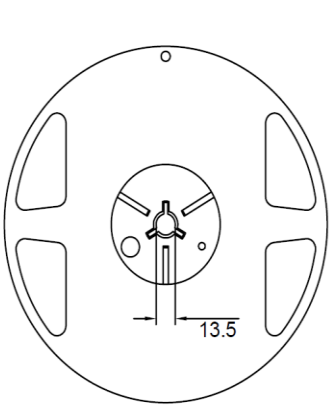
Min.100pcs /reel (Maximum 1000pcs)

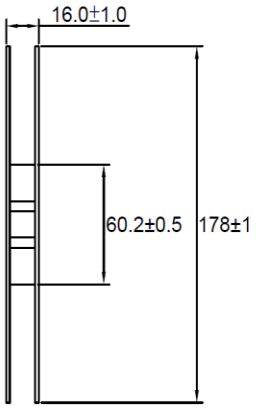


W	12.00±0.30
A0	3.72±0.10
B0	3.72±0.10
K0	2.40±0.10

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.







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 and apply baking at 60°C±5°C for 15hrs before use.

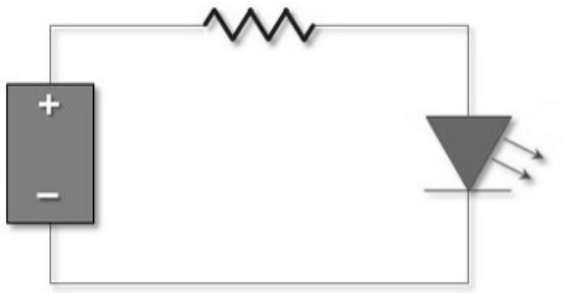
Baking:

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:

- 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-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.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	26/07/2014	Datasheet set-up.
A1.1	28/08/2014	Add starboard information.
A1.2	02/03/2015	Revised reel quantity.
A1.3	16/03/2015	P/N adds suffix Z indicating with Zeners.
A1.4	20/05/2016	Revised binning group.
A1.5	25/07/2018	Revised outline height 2.22t.