



**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
- ▶ 3535 2.22t Series
- ▶ Blue (460~470nm)

NOB09S80Z



Release Date: 01 June 2022 Version: A1.6



### 3535 2.22t Series

**RoHS**  
Compliant



#### FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Flux (typ.):** 27lm@350mA
- **Colour:** Blue
- **Wavelength:** 460~470nm
- **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 max.1000pcs /reel, ø180mm (7")

#### APPLICATIONS:

- 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 <sub>F</sub>	700	mA
Pulse Forward Current D=0.01s duty 1/10	I <sub>PF</sub>	1000	mA
Reverse Voltage	V <sub>R</sub>	5	V
Reverse Current @5V	I <sub>R</sub>	10	μA
Junction Temperature	T <sub>J</sub>	150	°C
Electrostatic Discharge (HBM: MIL-STD-883 C 3B)	ESD	8000	V
Operating Temperature	T <sub>OPR</sub>	-40~+85	°C
Storage Temperature	T <sub>STG</sub>	-40~+100	°C
Soldering Temperature	T <sub>SOL</sub>	250	°C

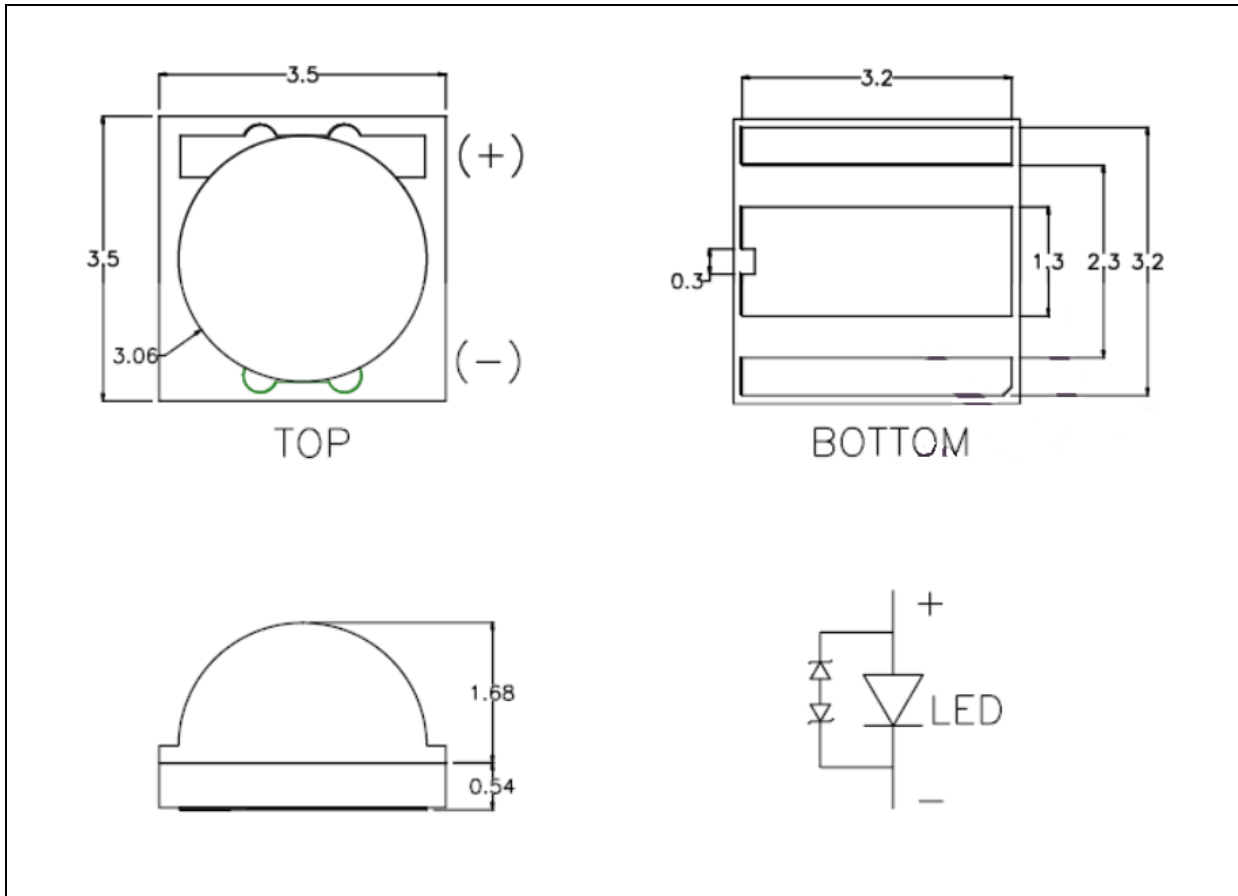
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V <sub>F</sub>	2.8	---	3.6	V	I <sub>F</sub> =350mA
Luminous Flux	Φ <sub>V</sub>	22	---	30	lm	I <sub>F</sub> =350mA
Dominant Wavelength	λ <sub>D</sub>	460	---	470	nm	I <sub>F</sub> =350mA
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	I <sub>F</sub> =350mA

- Luminous flux (Φ<sub>V</sub>) ±7%, Forward Voltage (V<sub>F</sub>) ±0.05V, Viewing angle(2θ<sub>1/2</sub>) ±10°

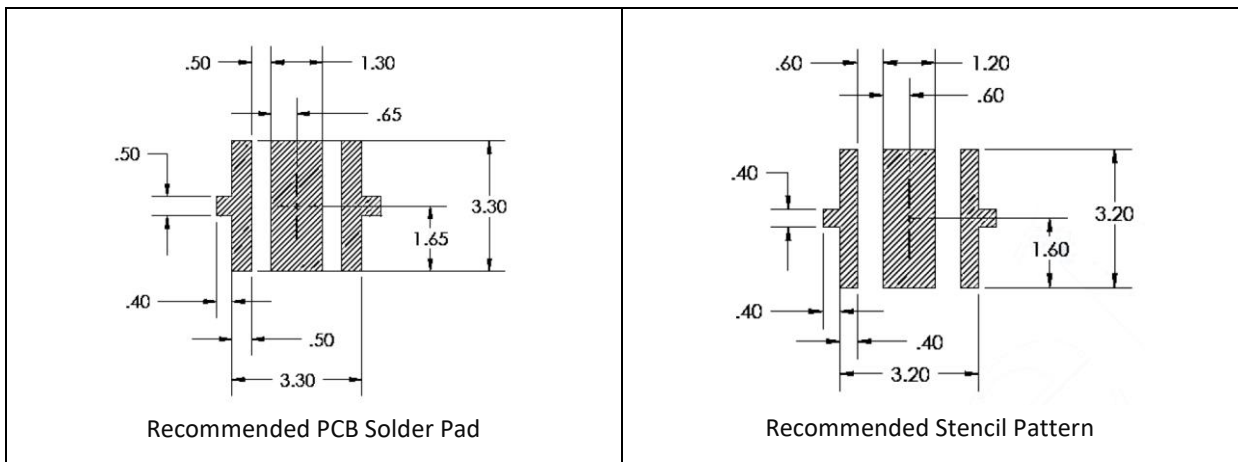
## OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.13\text{mm}$ , unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.12\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 350\text{mA}$ ):

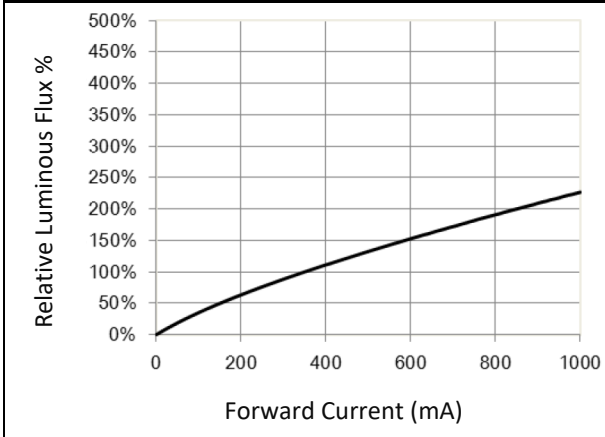
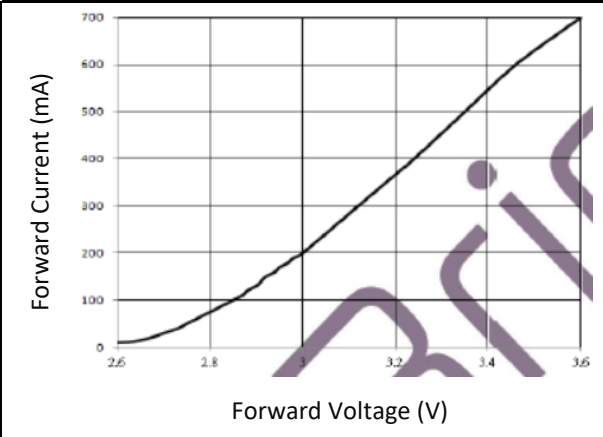
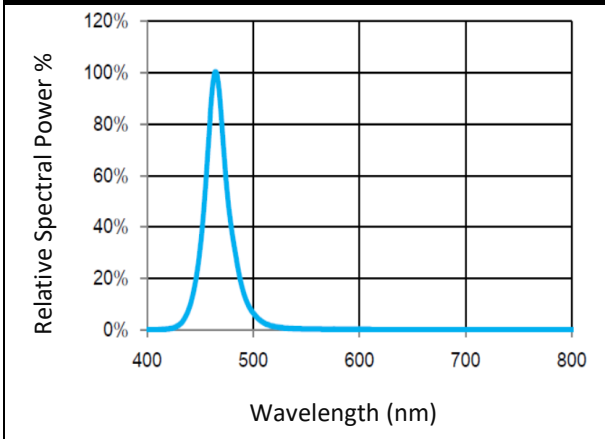
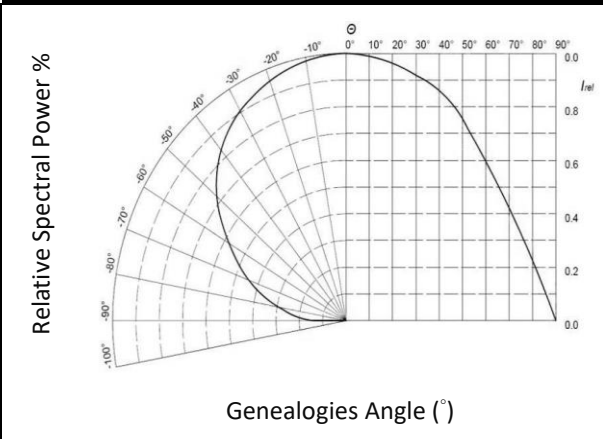
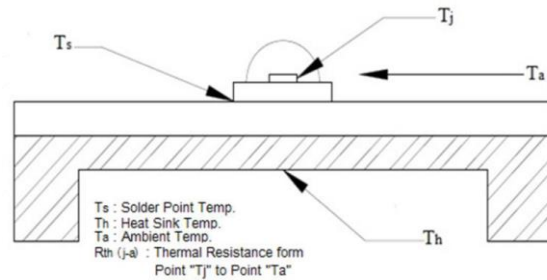
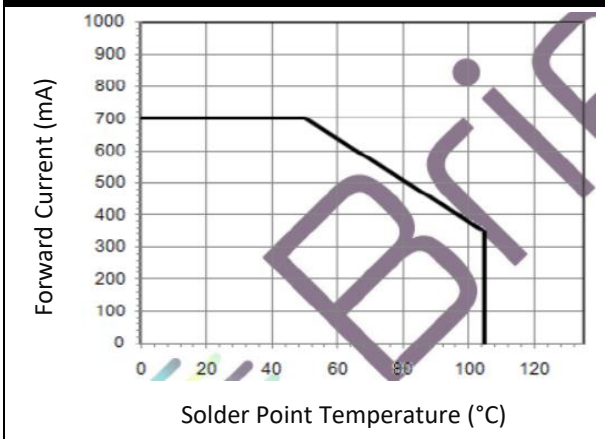
Code	Min.	Max.	Unit
V2830	2.8	3.0	V
V3032	3.0	3.2	
V3234	3.2	3.4	
V3436	3.4	3.6	

 Luminous Flux Classifications ( $I_F = 350\text{mA}$ ):

Code	Min.	Max.	Unit
B17	22	24	lm
B18	24	26	
B19	26	28	
B20	28	30	

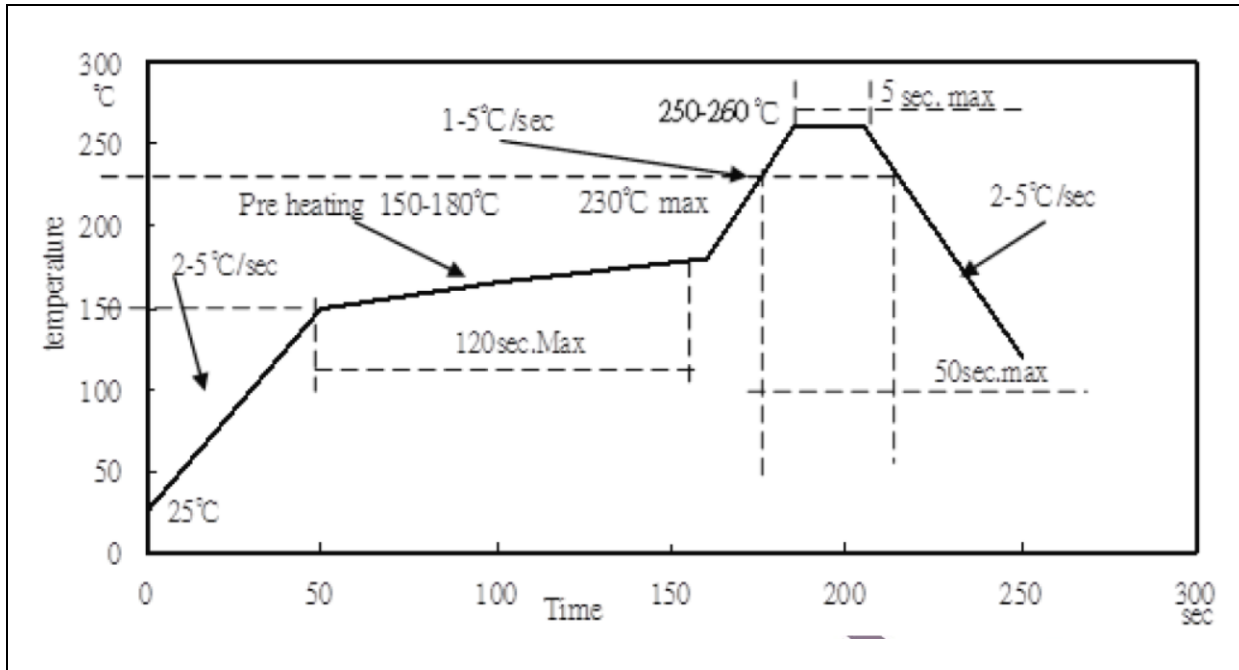
 Dominant Wavelength Classifications ( $I_F = 350\text{mA}$ ):

Code	Min.	Max.	Unit
B460	460	465	nm
B465	465	470	

**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:



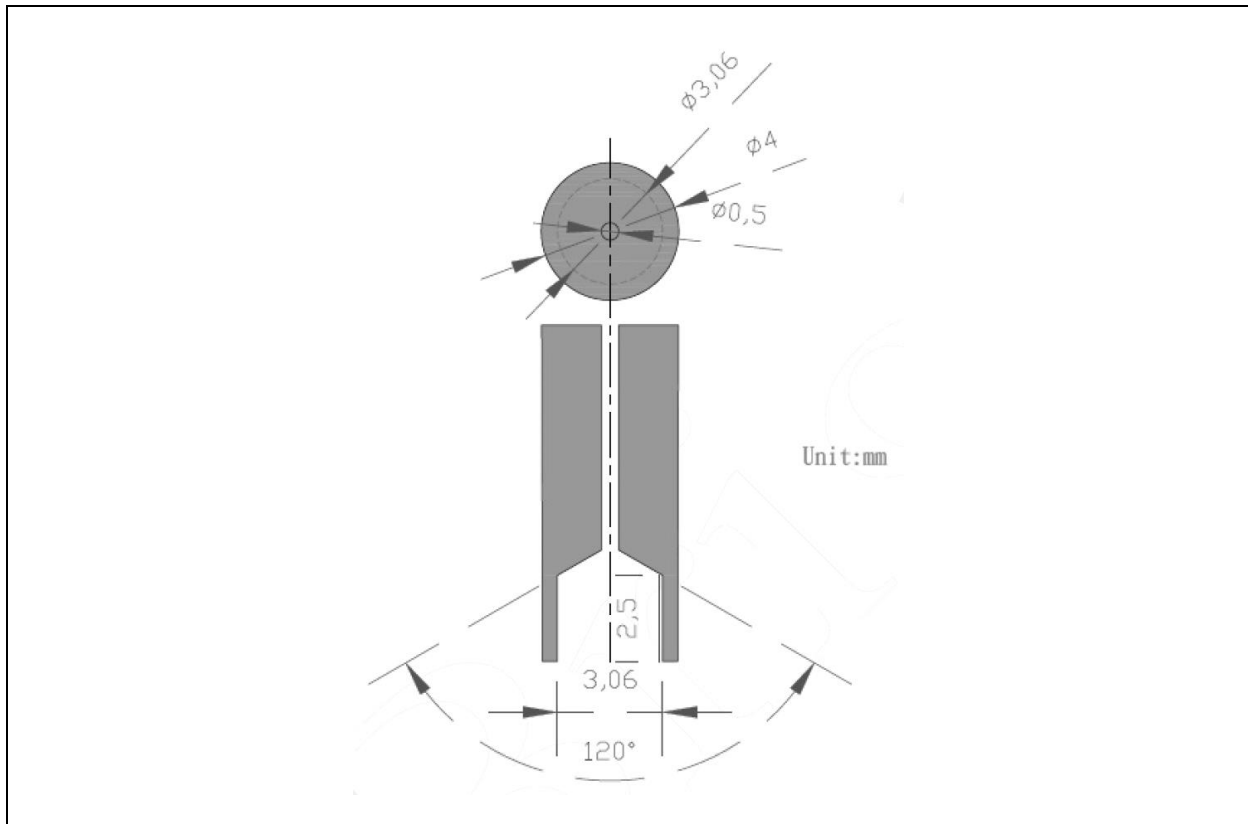
Note:

1. Maximum reflow soldering: 2 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:

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Recommended Pick & Place Nozzle:

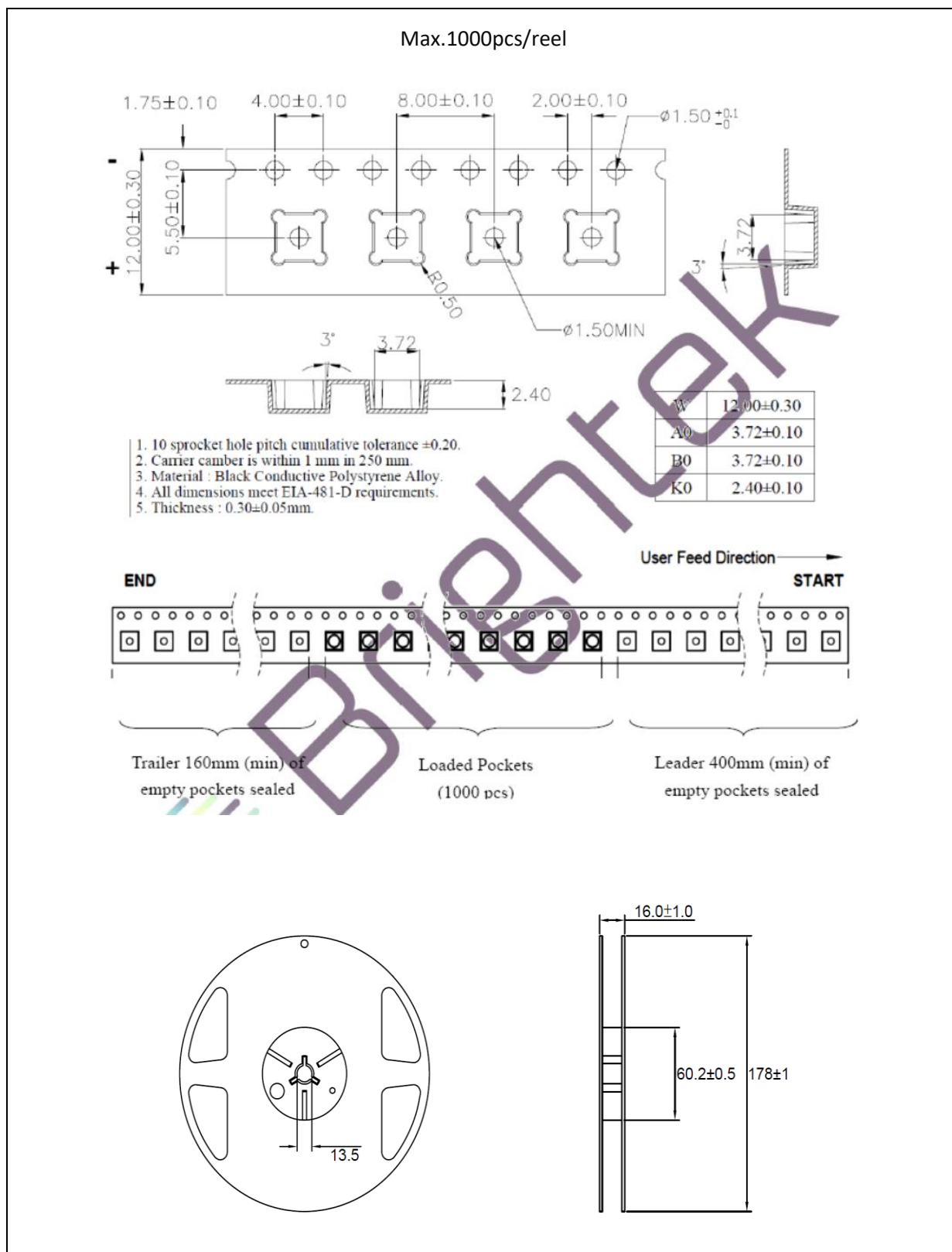


1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$ , unless otherwise noted.



**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 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:**

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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 range.
A1.5	25/07/2018	Update package height to 2.22t.
A1.6	01/06/2022	Update wavelength chart.

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