



**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



- ▶ PLCC6 SMD
- ▶ 3433 1.92t Series
- ▶ Natural White (5000K)

NOW49S40Z



Release Date: 04 June 2022 Version: A1.1



### 3433 1.92t Series

**RoHS Compliant**



**AUTOMOTIVE AEC-Q101**

#### FEATURES:

- **Package:** PLCC6 Top View White SMT Package
- **Forward Current:** 140mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Intensity (typ.):** 15900mcd@140mA
- **Colour:** Natural White
- **Colour Temperature (CCT):** 4745~5310
- **Viewing angle:** 120°
- **Materials:**
  - Resin: Silicon (Yellow Diffused)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **ESD (HBM):** 6kV
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - CIE Chromaticity
- **Soldering methods:** IR Reflow
- **MSL:** acc. to JEDEC Level 3 (J-STD20D)
- **Packing:** 12mm tape with max.1000/reel, ø180mm (7")

#### APPLICATIONS:

- Automotive
- Decorative Lighting
- Backlighting
- Indicator
- Dashboard
- Display

## CHARACTERISTICS:

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

Parameter	Symbol	Ratings	Unit
Forward Current	I <sub>F</sub>	240	mA
Pulse Forward Current Duty 1/10, width 0.1ms	I <sub>PF</sub>	300	mA
Reverse Voltage	V <sub>R</sub>	5	V
Reverse Current @10V	I <sub>R</sub>	10	μA
Junction Temperature	T <sub>J</sub>	125	°C
Electrostatics Discharge (HBM)	ESD	6000	V
Operating Temperature	T <sub>OPR</sub>	-40~+105	°C
Storage Temperature	T <sub>STG</sub>	-40~+105	°C
Soldering Temperature	T <sub>SD</sub>	260	°C
Colour Rendering Index	CRI	80	---

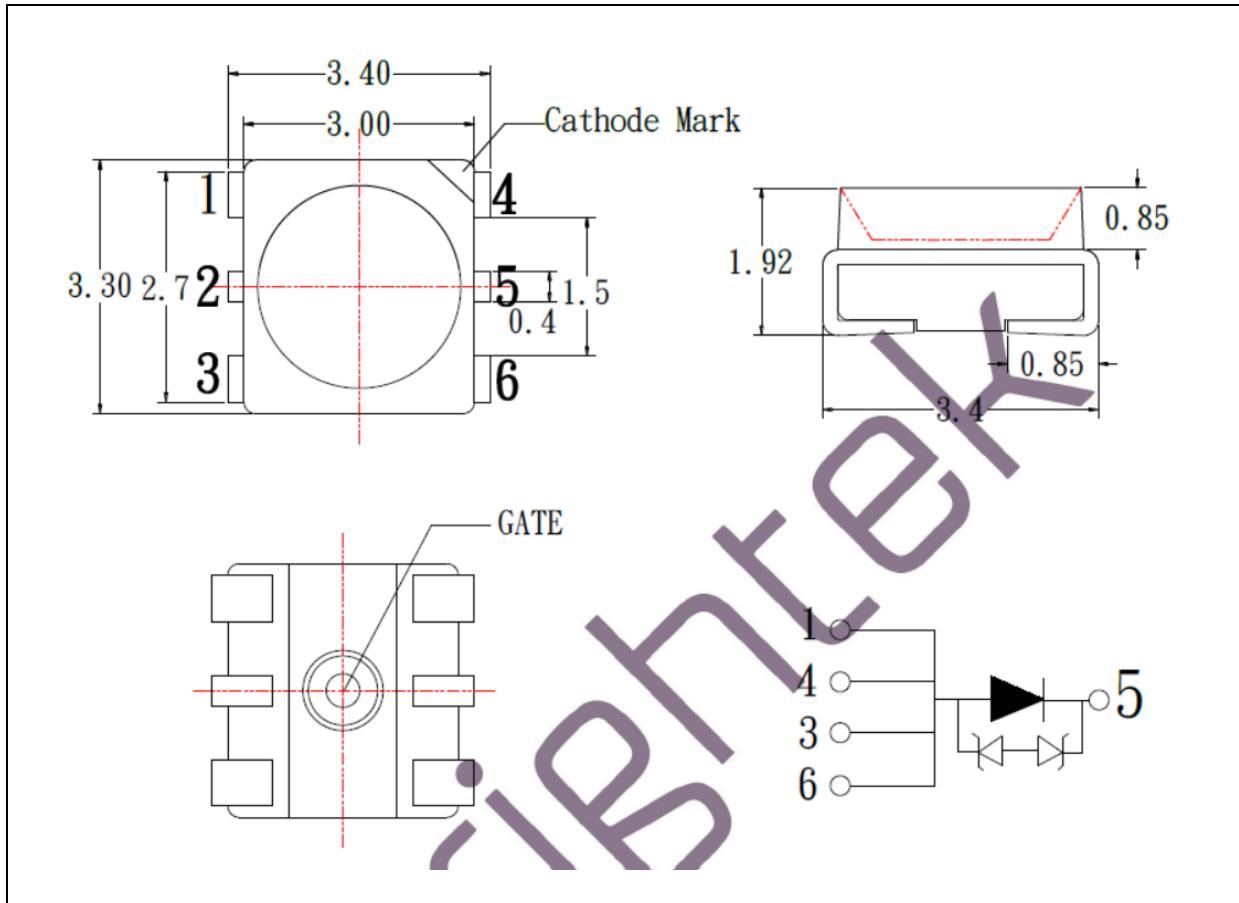
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V <sub>F</sub>	2.7	3.1	3.9	V	I <sub>F</sub> =140mA
Luminous Intensity	I <sub>v</sub>	10100	15900	---	mcd	I <sub>F</sub> =140mA
Luminous Flux	Φ <sub>v</sub>	---	50	---	lm	I <sub>F</sub> =140mA
Chromaticity Coordinates	X	---	0.3452	---	---	I <sub>F</sub> =140mA
	Y	---	0.3558	---		
Colour Temperature	CCT	4745	5000	5310	K	I <sub>F</sub> =140mA
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	I <sub>F</sub> =140mA

1. Luminous intensity (I<sub>v</sub>) ±10%, Forward Voltage (V<sub>F</sub>) ±0.1V, Viewing angle(2θ<sub>1/2</sub>) ±5%, Wavelength ±1nm

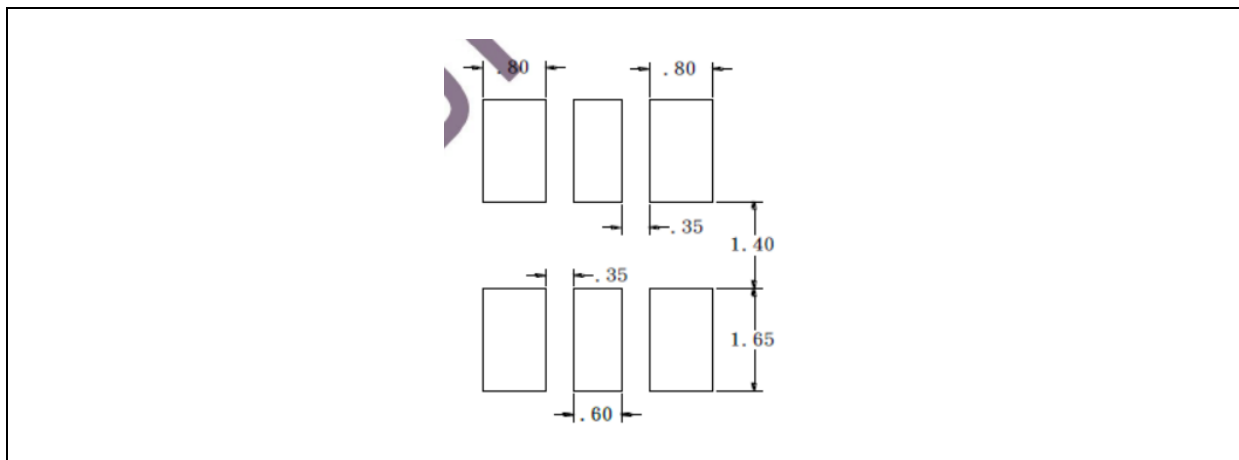
## OUTLINE DIMENSION:

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:**

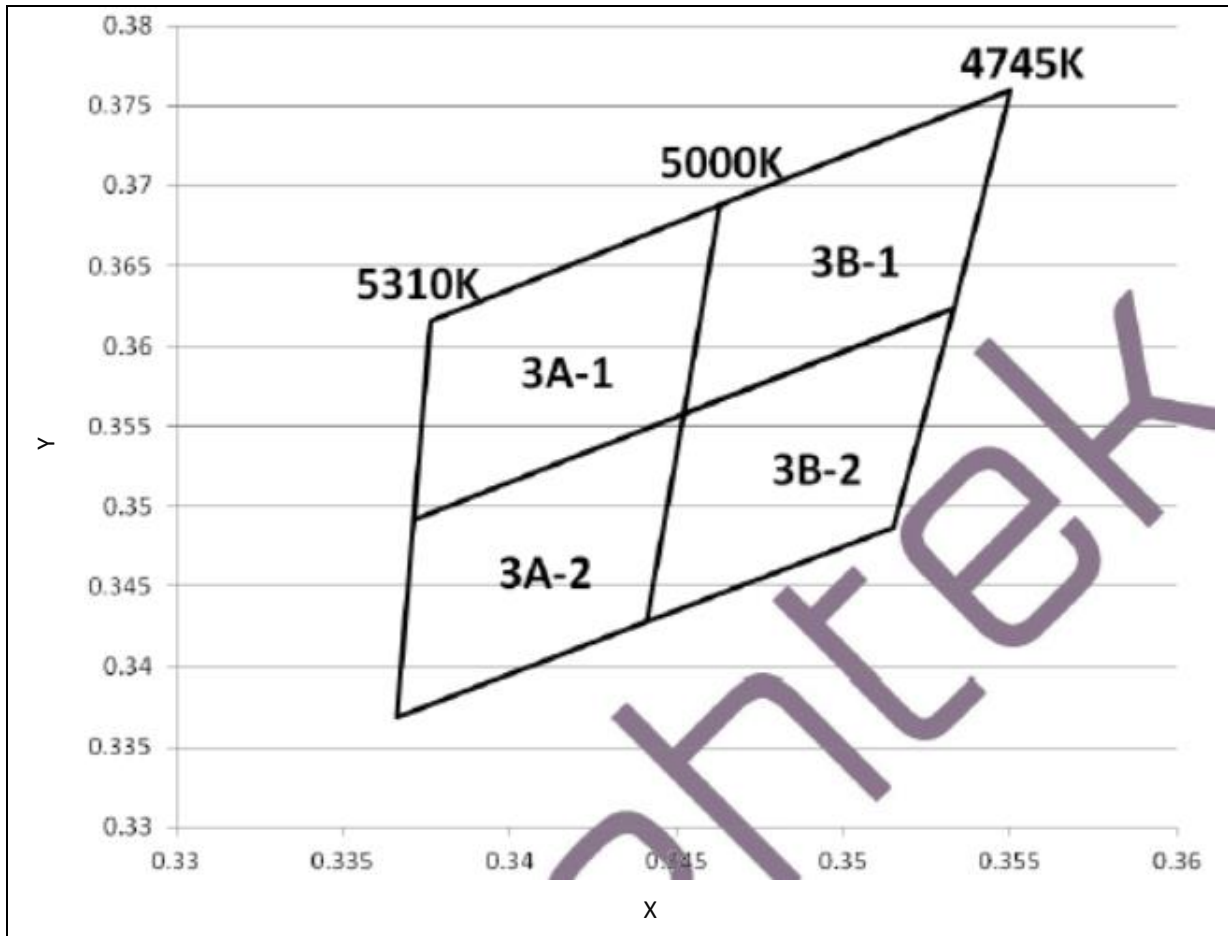

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 Forward Voltage Classifications ( $I_F = 140\text{mA}$ ):

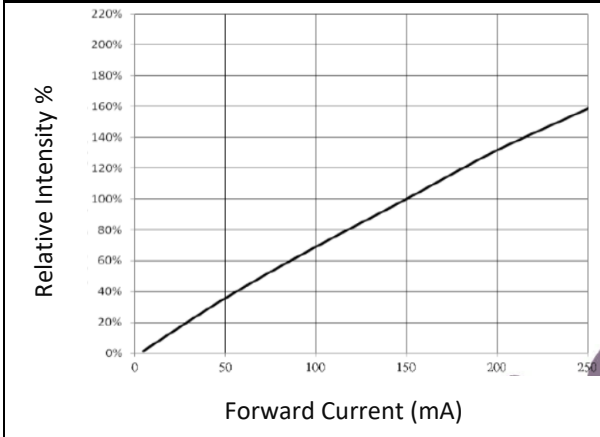
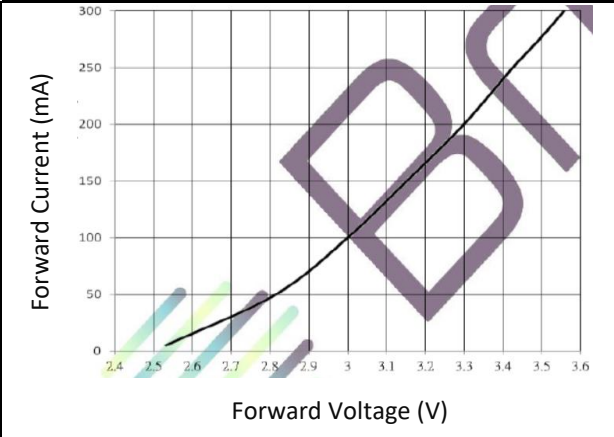
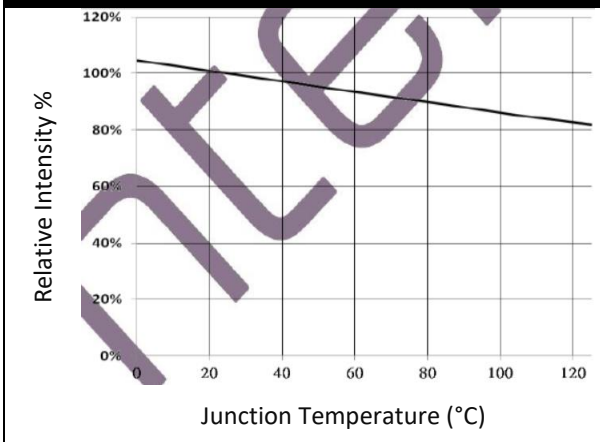
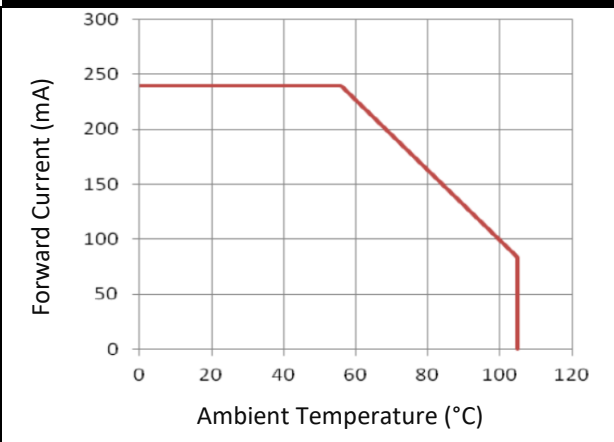
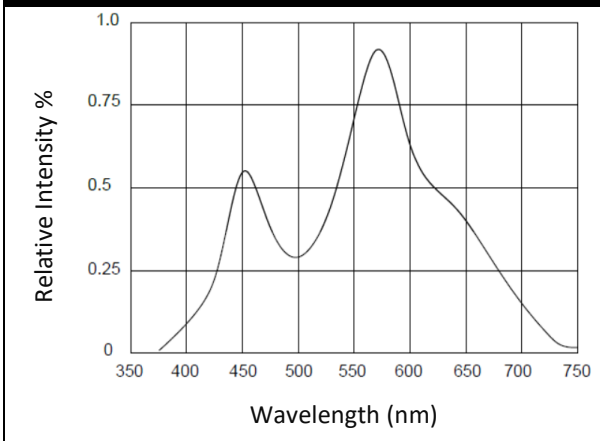
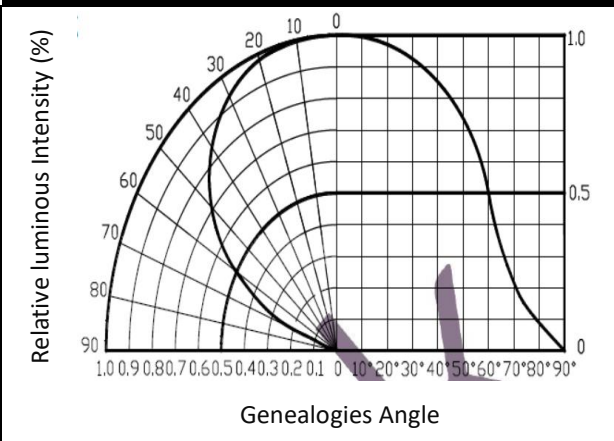
Code	Min.	Max.	Unit
H	2.7	3.0	V
I	3.0	3.3	
J	3.3	3.6	
K	3.6	3.9	

 Luminous Intensity Classifications ( $I_F = 140\text{mA}$ ):

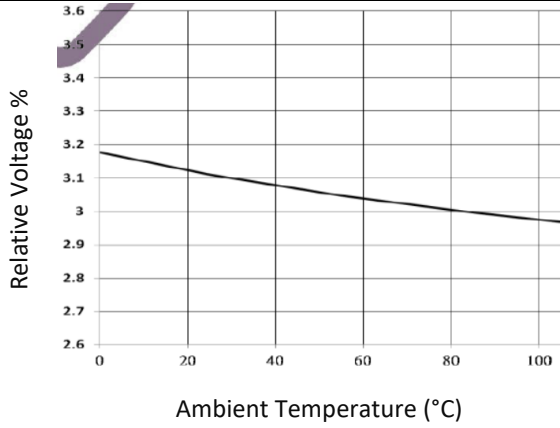
Code	Min.	Max.	Unit
24	10100	13130	mcd
25	13130	17000	
26	17000	22110	

**CIE CHROMATICITY DIAGRAM:**

 Chromaticity Coordinates Classifications ( $I_F = 140\text{mA}$ ):

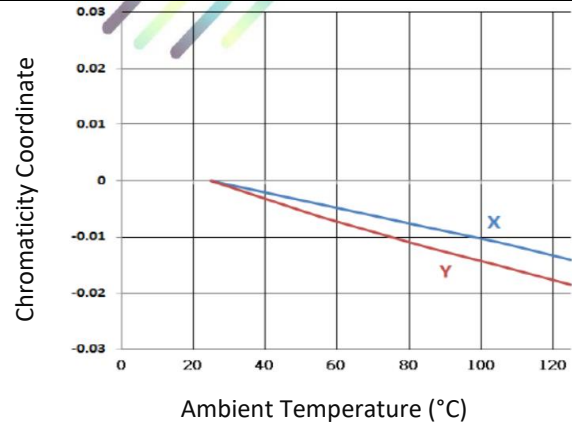
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
3A-1	0.3463	0.3688	0.3376	0.3616	0.3371	0.3492	0.3452	0.3558
3A-2	0.3452	0.3558	0.3371	0.3492	0.3366	0.3369	0.3341	0.3428
3B-1	0.3452	0.3558	0.3463	0.3688	0.3550	0.3760	0.3533	0.3624
3B-2	0.3441	0.3428	0.3452	0.3558	0.3533	0.3624	0.3515	0.3487

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

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

**Relative Intensity v.s. Temperature**

**Forward Current Derating Curve**

**Relative Intensity v.s. Wavelength**

**Directive Radiation**


Relative Voltage v.s. Temperature

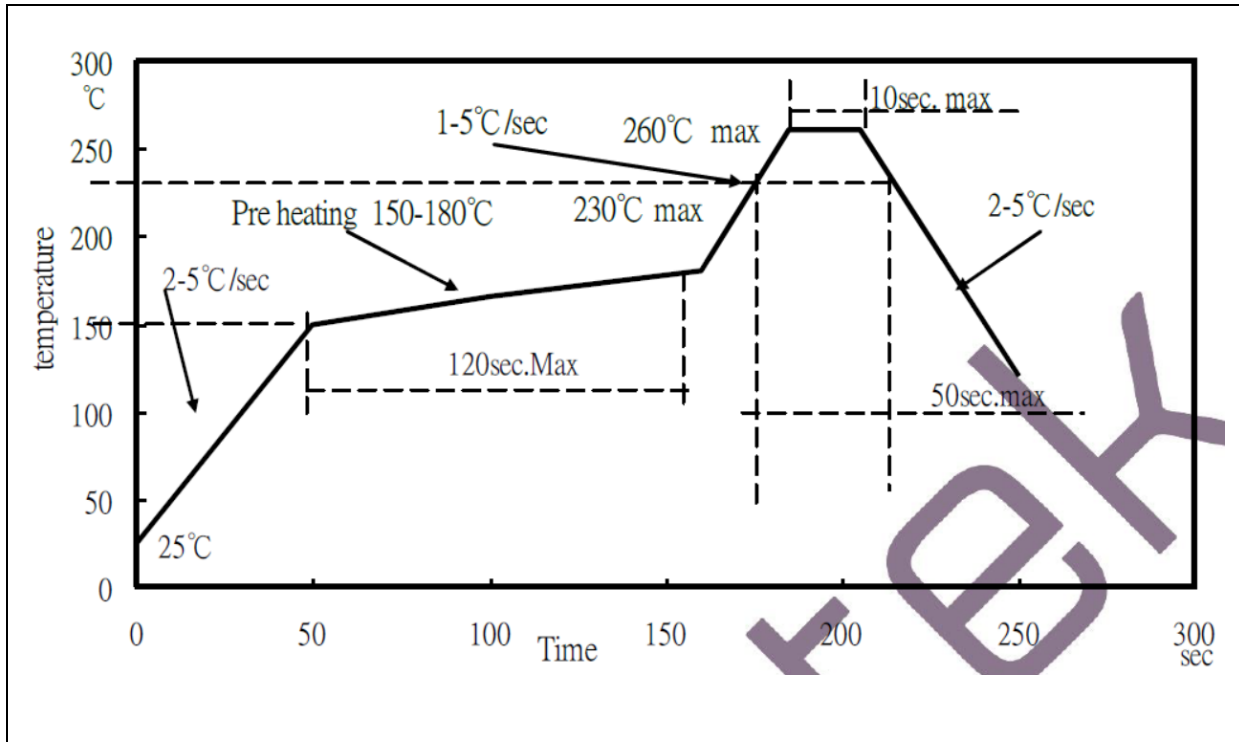


X, Y Shift v.s. Temperature



## RECOMMENDED SOLDERING PROFILE:

IR Reflow Lead-free Solder:



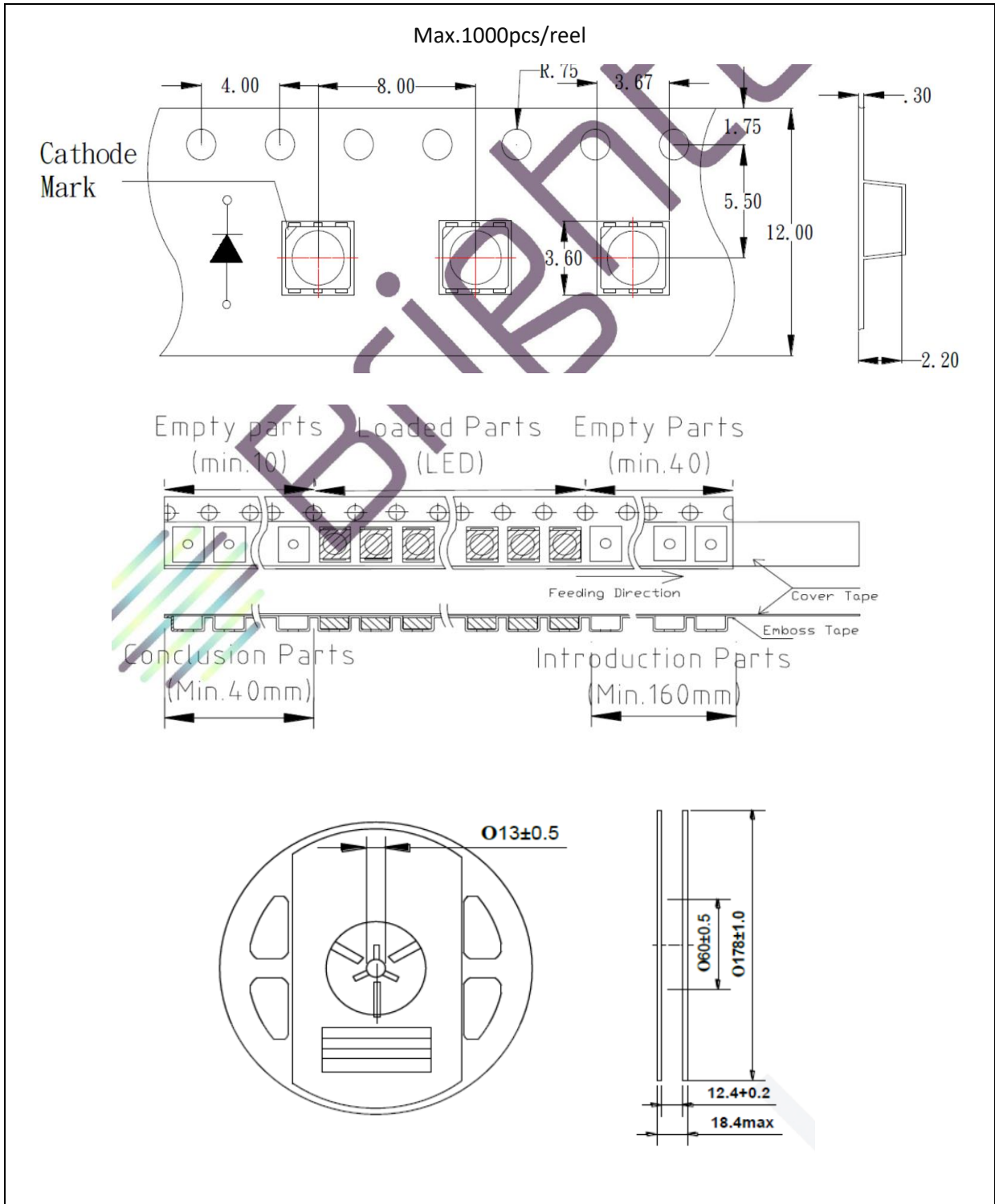
Note:

1. Maximum reflow soldering: 3 times.
2. Recommended reflow temperature 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:

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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 6hrs and <5%RH, for 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	28/05/2019	Datasheet set-up.
A1.1	04/06/2022	New datasheet format.