5Z2835AW32LFZ1NN

◆**Outline(L*W*H): 3.5*2.8*0.7 mm**

◆**High flux efficiency & offer a middle power**

◆**Good thermal dissipation & optical uniformity**

Table of Contents

Features

- Forward current: ≦100mA
- Typical view angle 50% Iv: 120°
- RoHS and REACH-compliant
- Lens color: yellowish
- MSL 2a qualified according to JEDEC J-STD20D
- ESD Level 6kV(HBM)
- Reliability Test: AEC Q-101 qualified

Applications

- Indoor signage display applications
- Indoor decorating and entertainment design
- Indicator and backlighting for all consumer electronics
- Other application
- Automotive electronics

■ Product Code Method

5 - Z - 2835 -A- W32L - F - Z - 1 - N -N

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	②	③	④	⑤
Process Type	Category	Lead Frame Size	View Angle	Dice Wavelength &Luminous Rank
5: special product	Z: SMD power LED	2835: 2.8* 3.5mm	A: 120°	Wxxx: White

⑥	⑦	⑧	⑨	⑩
Bracket or COB specifications	CRI Zener code	Assembly Code	After the Station Process Code	Spectral Condition Code
F: bracket code	Z: zener	1: company code for different meaning	N: PLCC procedure	N: 60mA for testing

■ Maximum Rating(Ta=25℃)

Characteristics	Symbol	Rating	Unit
DC forward current	I_F	100	mA
Pulse forward current*3	I_{PF}	200	mA
Reverse voltage	V_R	5	V
Junction temperature	T_J	125	°C
Operating temperature range	T_{OP}	-40-105	°C
Storage temperature range	T_{STG}	-40-105	°C
Soldering temperature*4	T_{SD}	260	°C

Notes 1: There is no maximum or typical voltage parameter

2: For other ambient, limited setting of current will be depended on de-rating curves.

3: Duty 1/10, pulse width 0.1ms

4: The maximum of soldering time is 5 seconds in T_{SD}

■ Typical Product Characteristics (Ta=25℃)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test condition
Forward Voltage	V_F	2.8	3.2	3.6	V	I_F=60mA
Reverse Current	I_R	-	-	10	μA	V_R= 5V
Luminous Lumen	Φ	18	21	-	lm	I_F=60mA
View Angle	$2\theta_{1/2}$	-	120	-	deg	I_F=60mA
Color Coordinate	x	-	0.321	-	-	I_F=60mA
	y	-	0.332	-	-	
Color Rendering Index	CRI	70	-	-	-	I_F=60mA
Color Temperature	CCT	5710	-	6530	K	I_F=60mA

Notes: 1. Measurement Errors:

Forward Voltage: ±0.1V, Luminous Lumen: ±10%Φ, View Angle: ±5%, Color Coordinate (x, y) ± 0.006

Color Rendering Index: ±5, Color Temperature: ±10%

2. Electrical-Optical characteristics (Ta=25℃)

■ Range of Bins

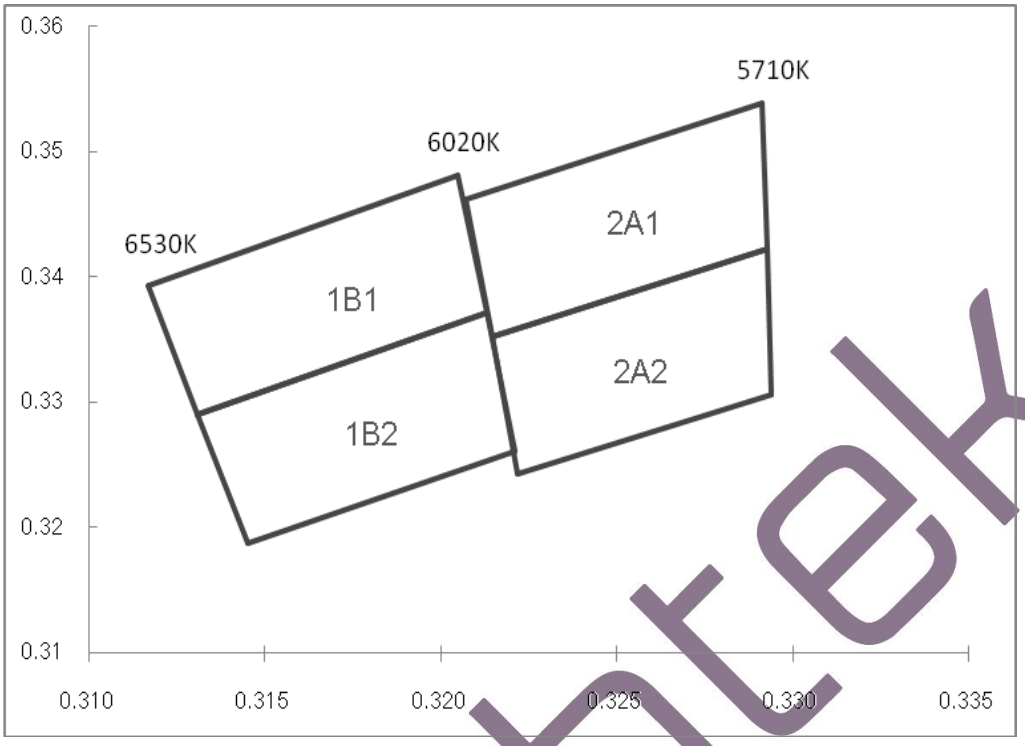
1). Forward Voltage Bins (I_F=60mA)

Bin Code	Min. V_F (V)	Min. V_F (V)
B	2.8	2.9
C	2.9	3.0
D	3.0	3.1
E	3.1	3.2
F	3.2	3.3
G	3.3	3.4
H	3.4	3.5
I	3.5	3.6

2). Luminous Lumen Bins (I_F=60mA)

Bin Code	Min. Φ (lm)	Max. Φ (lm)
15	18	20
16	20	22
17	22	24

■ Color Coordinate Comparison

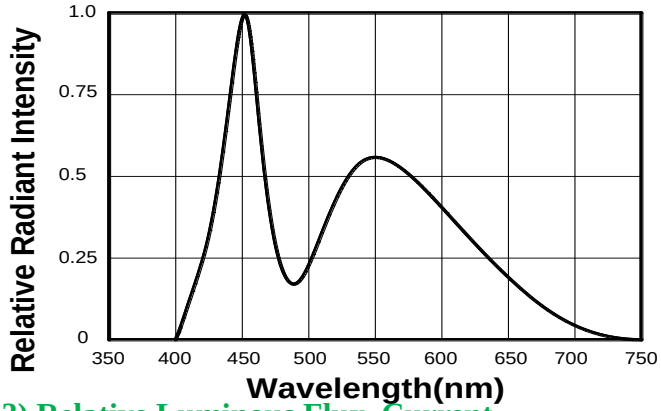


Color Rank

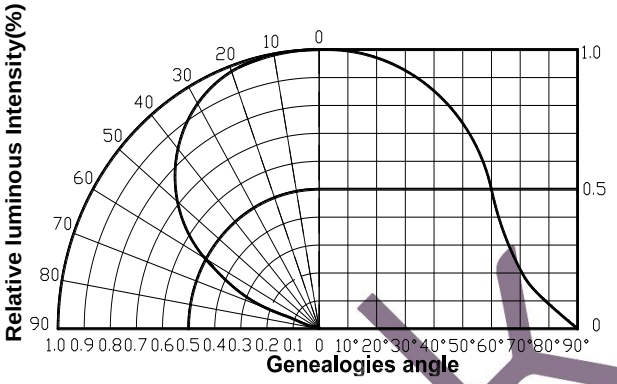
BIN	x	y	BIN	x	y
1B1	0.3205	0.3481	1B2	0.3213	0.3371
	0.3117	0.3393		0.3131	0.3290
	0.3131	0.3290		0.3145	0.3187
	0.3213	0.3371		0.3221	0.3261
2A1	0.3292	0.3539	2A2	0.3293	0.3423
	0.3207	0.3462		0.3215	0.3353
	0.3215	0.3353		0.3222	0.3243
	0.3293	0.3423		0.3294	0.3306

■ Electrical-Optical Characteristics

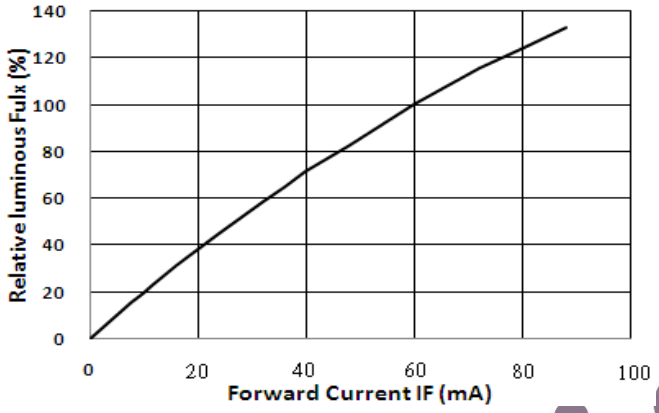
1).Relative Spectral Distribution



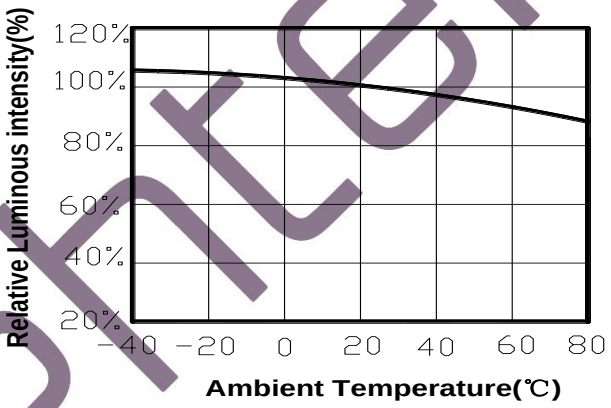
2).Typical Spatial Distribution



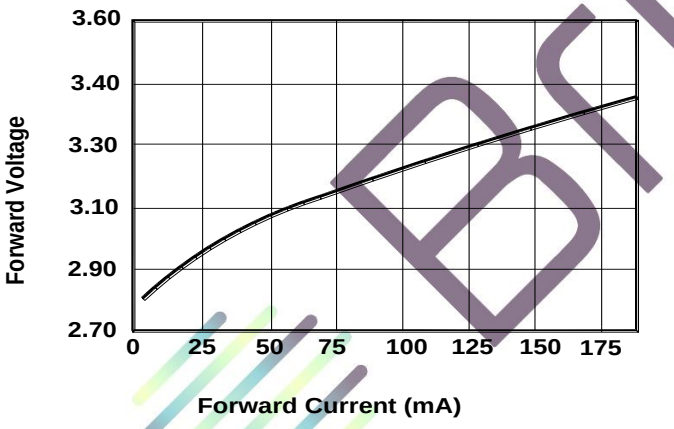
3).Relative Luminous Flux .Current



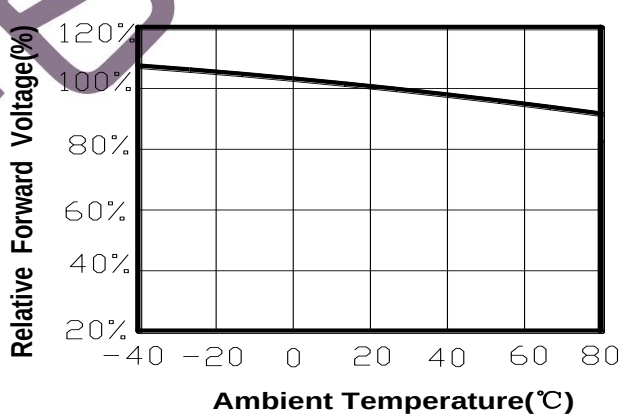
4).Relative Luminous Flux .Ambient Temperature



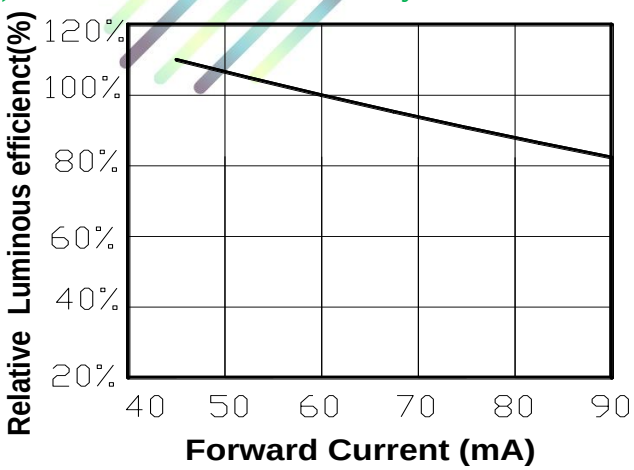
5). Electrical Characteristics



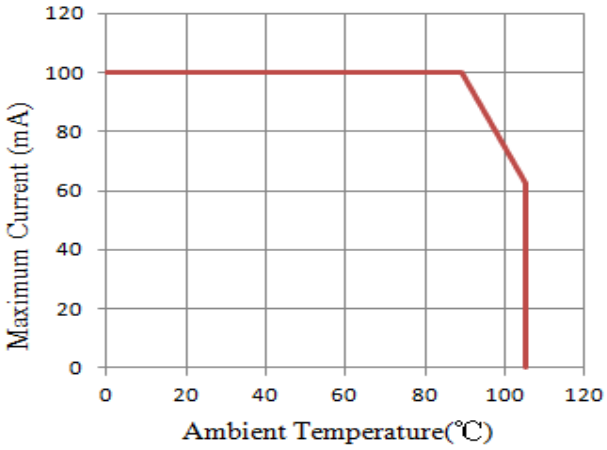
6).Forward Voltage Temperature



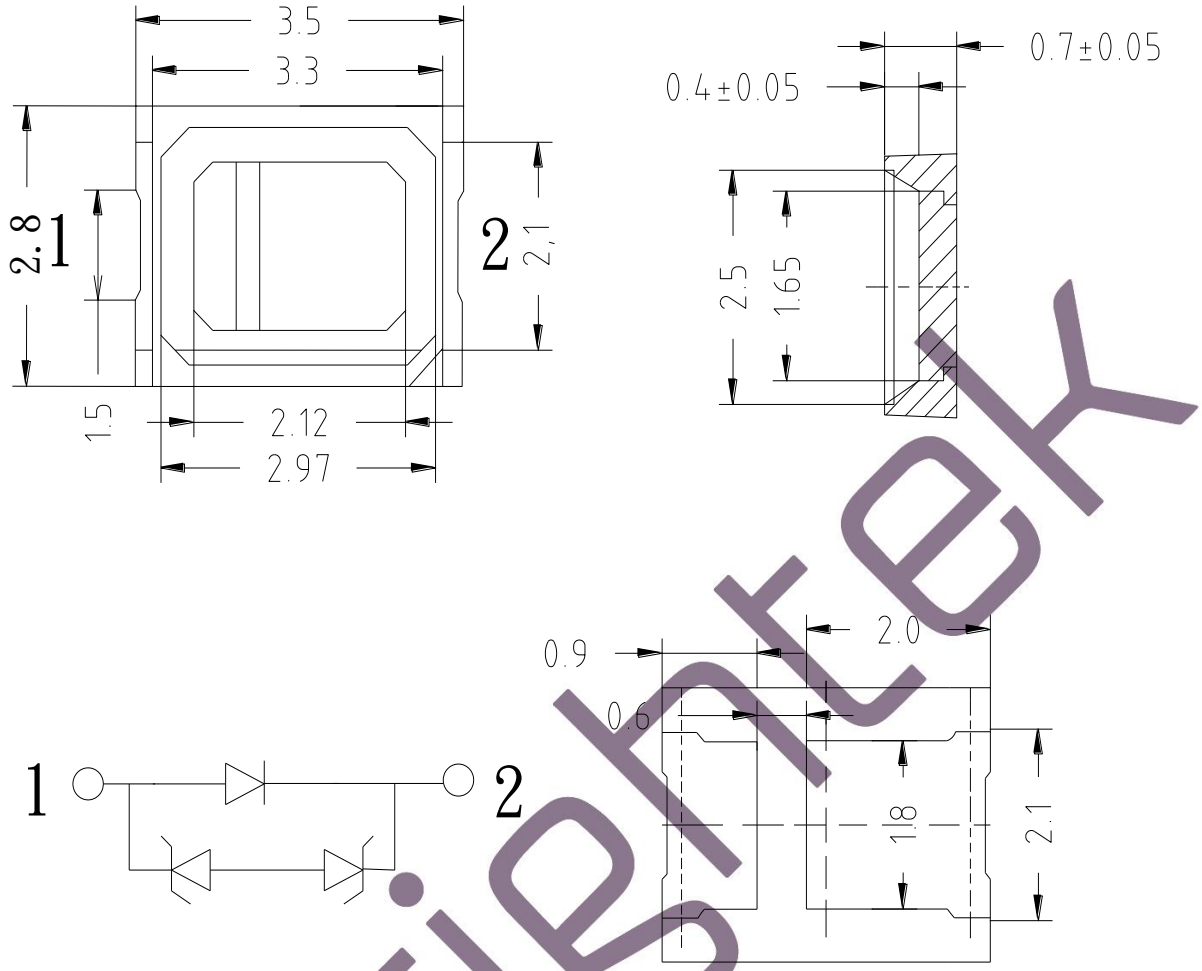
7). Relative Emission Efficiency. Current



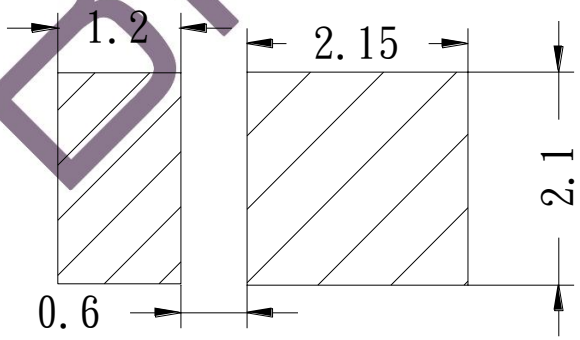
8).Thermal Design



■ Dimensions



Recommend Pad layout



Notes: 1. All dimensions are in millimeters

2. Tolerance is ±0.1mm unless otherwise noted

3. Specifications are subject to change without notice.

■ Reflow Profile

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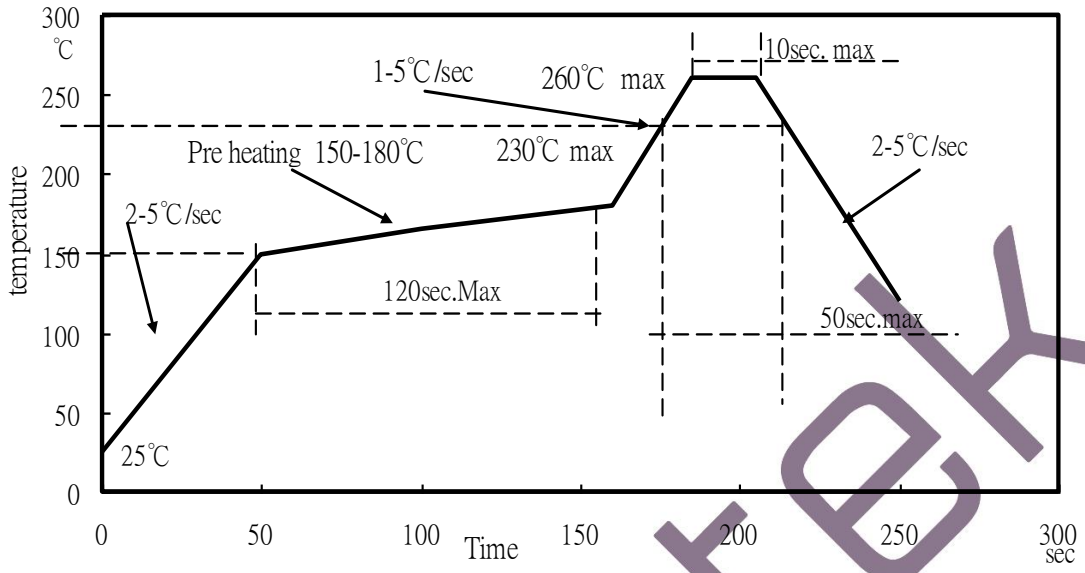
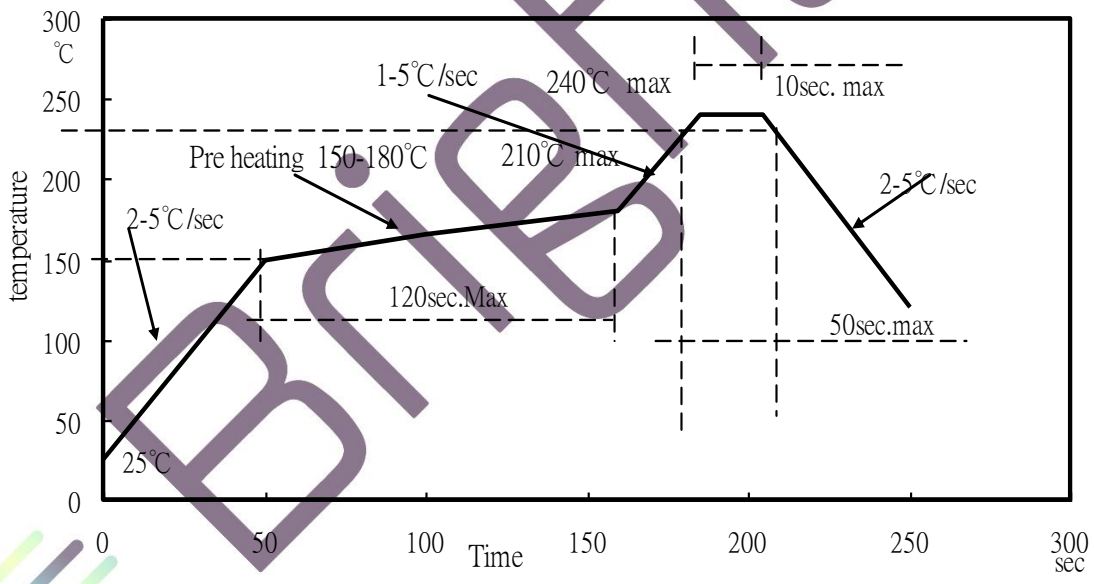
1. I_R reflow soldering Profile for Lead Free solder



2. I_R reflow soldering Profile for Lead solder



Notes:

1. We recommend the reflow temperature 240℃ (±5℃).the maximum soldering temperature should be limited to 260℃.
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall be less than 3 times.

■ Test Circuit and Handling Precautions

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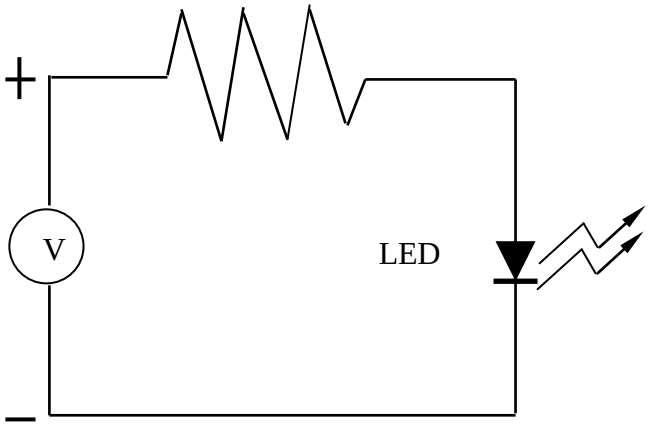
1. Test circuit



2. Handling precautions

2.1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2.2. Storage

1). It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5℃~30℃(41℉~86℉)

2). Shelf life in sealed bag: 12 month at ＜5℃~30℃ and ＜60% R.H. after the package is Opened, the products should be used within 4 weeks or they should be keeping to stored at ≦20%R.H. with zip-lock sealed.

2.3. Baking

Suggest packing open after 4 weeks, before use baking products, conditions as follows:

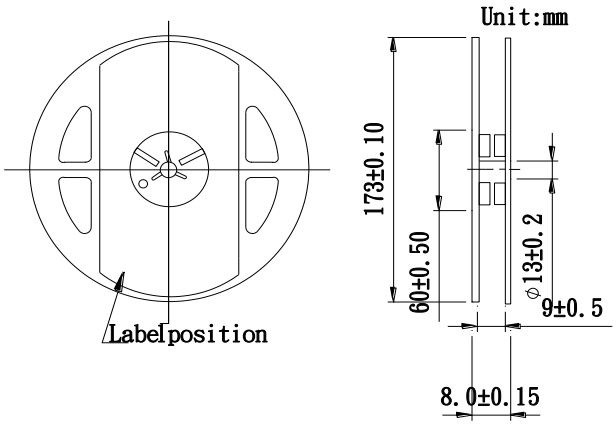
1). 60±3℃ X 6hrs and ＜5%RH, for reel

2). 125±3℃ X 2hrs, for single LED

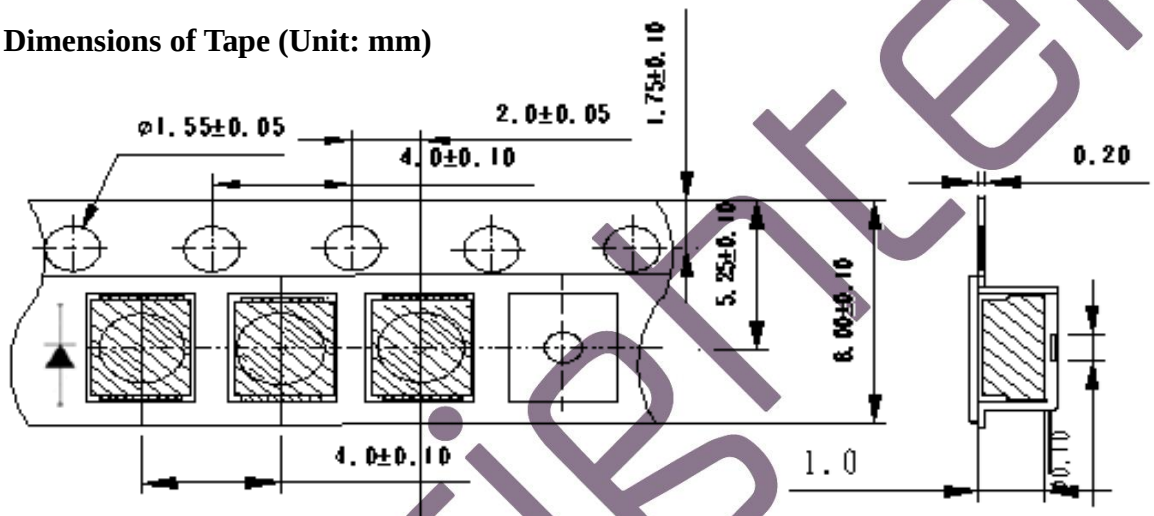
It shall be normal to see slight color fading of carrier (light yellow) after baking in process

■ Packing

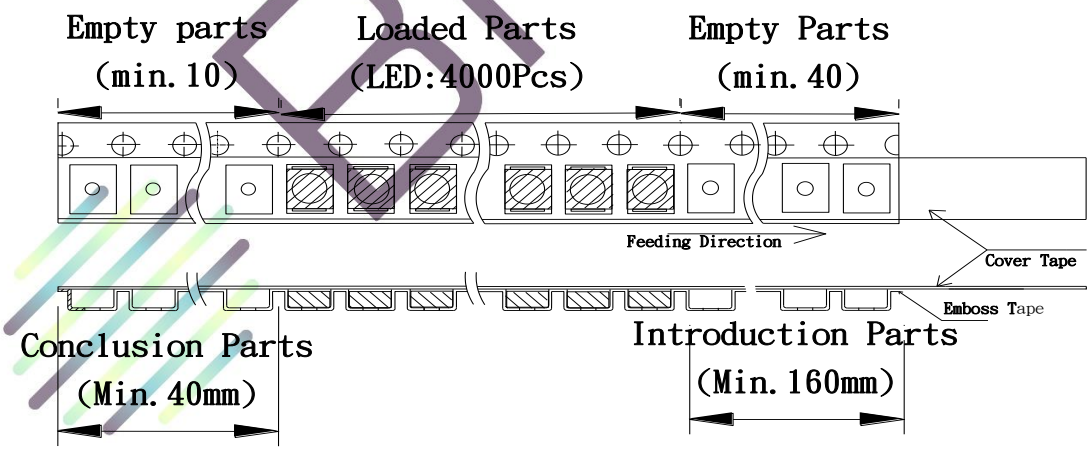
- **Dimensions of Reel (Unit: mm)**



- **Dimensions of Tape (Unit: mm)**



- **Arrangement of Tape**

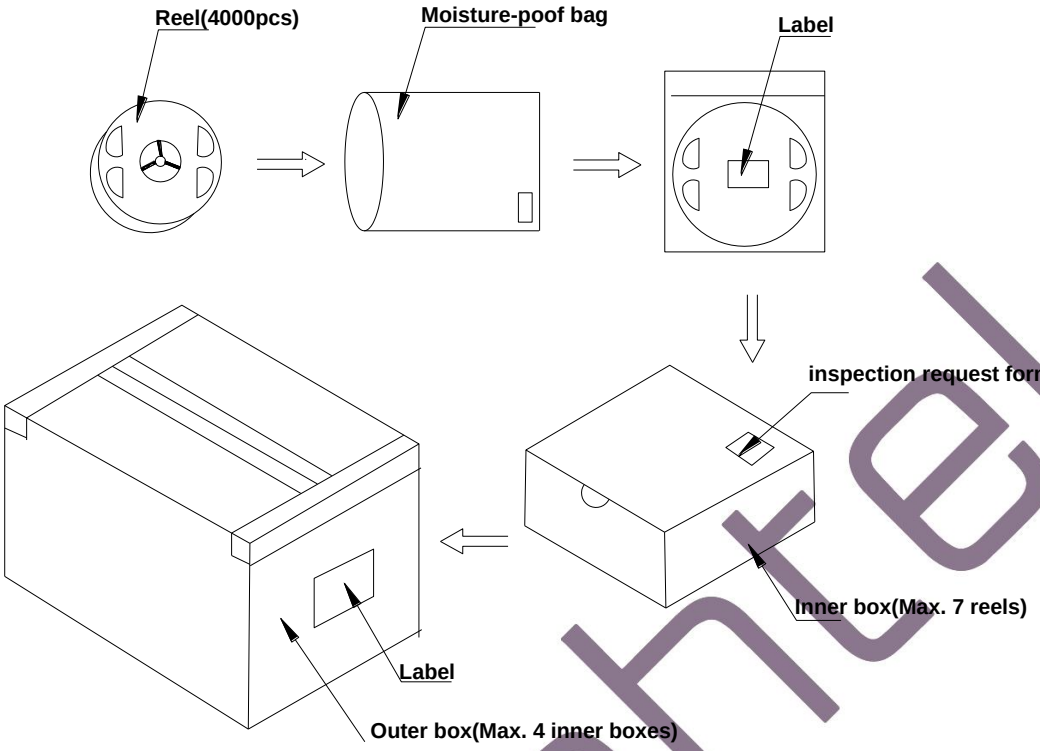


Notes:

1. Empty component pockets are sealed with top cover tape
2. The max loss number of SMD is 2pcs
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications
4. 4,000pcs per reel
5. The remainder packing in multiples of 500pcs.

■ Packing

● Packaging specifications



Notes:

Reeled product (max.4,000) is packed in a sealed moisture-proof bag. Seven bags are packed in an inner box (size: about 260 X 230 X 100 mm) and four inner boxes are in an outer box (size: about 480 X 275 X 215mm). On the label of moisture-poof bag, there should be the information of Part No., Lot No. and quantity number; also the total quantity number should be on inspection request form on outer box.

■ Precautions

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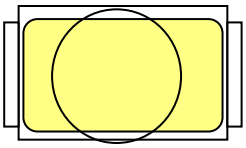
1. **Abnormal situation caused by improper setting of collet**

   To choose the right collet is the key issue in improving the product's quality. LED is different from other electronic components, which is not only about electrical output but also for optical output. This characteristic made LED more fragile in the process of SMT. If the collet's lowering down height is not well set, it will bring damage to the gold wire at the time of collet's picking up and loading which will cause the LED fail to light up, light up now and then or other quality problems

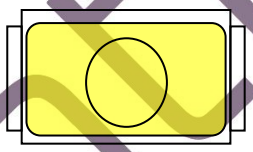
2. **How to choose the collet**

   During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in case that improper position of collet will damage the gold wire inside the LED. Different collets fit for different products, please refer to the following pictures cross out

Outer diameter of collet should be larger than the lighting area



Picture 1(√)



Picture 2(X)

3. **Other points for attention**

   A. No pressure should be exerted to the epoxy shell of the SMD under high temperature.

   B. Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.

   C. LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.

4. **This usage and handling instruction is only for your reference.**

■ Test Items and Results of Reliability

Test Item	Test Conditions	Duration/ Cycle	Ac/Re	Number of Damage	Reference
Normal Temperature Life	Ta＝23℃(±5℃) I_F=60mA	1008 hrs	0/1	0/22	JESD22 A-108
High Temperature Life	Ta＝85℃(±5℃) I_F=60mA	1008 hrs	0/1	0/22	JESD22 A-108
High Humidity Heat Life	Ta＝85℃(±5℃) RH=85% I_F=60mA	1008 hrs	0/1	0/22	JESD22 A-108
Thermal shock	-45℃/30min~105℃ /30min (±5℃)	1008 hrs	0/1	0/22	JESD22 A-104
Electrostatic Discharge (ESD) Test	According to the SPEC	3 cycles	0/1	0/22	AEC Q101-001
Low Temperature Storage	T_a=-40℃	1008 hrs	0/1	0/22	JESD22-A103D
High Temperature Storage	T_a=125℃	1008 hrs	0/1	0/22	JESD22-A103D

***Criteria for Judging**

Item	Symbol	Condition	Criteria for Judgment of Pass	
			Min	Max
Forward Voltage	V_F	I_F=60mA	-	USL*[1]×1.1
Reverse Current	I_R	V_R= 5V	-	10μA
Luminous Lumen	Φ	I_F=60mA	LSL*[2]×0.7	-

[Note] USL*[1]: Upper Specification Level

LSL*[2]: Lower Specification Level