SPECIFICATION FOR APPROVAL

Customer	**:**	
Customer Part No.	**:**	
Brightek Part No.	**:**	5Z3433AY26DN01NQ
Time	**:**	2022/05/30

Customer Confirmation	Approval	Checked By	Prepared By
	Wilson	CB.Tan	GP.Liu

5Z3433AY26DN01NQ

◆**Outline(L*W*H): 3.4*3.3*1.92 mm**

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

◆**Good thermal dissipation & optical uniformity**

Table of Contents

Features

- Forward current: ≦200mA
- Typical view angle 50% Iv: 120°
- RoHS2.0 and REACH-compliant
- Lens color: water transparent
- Qualified according to JEDEC moisturevity Level 2a
- ESD level 2 kV(HBM)
- Reliability Test: AEC Q-102qualified

Applications

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

■ Product Code Method

5 - Z - 3433 - A - Y26D - N - 0 - 1 - N - Q

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	3433: 3.4*3.3mm	A: 120º	Yxxx: yellow

⑥	⑦	⑧	⑨	⑩
COB or Bracket Module Code	CRI or Zener	Assembly Code	Process Code	Spectral Condition Code
N: article mode	0: no Zener	1: company code for different meaning	N: PLCC procedure	Q: 140mA for test

■ Maximum Rating(Ta=25℃)

Characteristics	Symbol	Typical	Unit
DC Forward Current	I_F	200	mA
Pulse Forward Current*3	I_{PF}	400	mA
Reverse Voltage	V_R	10	V
Junction Temperature	T_J	150	ºC
Operating Temperature Range	T_{OP}	-40-125	ºC
Storage Temperature Range	T_{STG}	-40-125	ºC
Soldering Temperature*4	T_{SD}	260	ºC
Thermal Resistance Junction/ Solder Point	RTH_{J-S}	30	℃/W
Thermal Resistance Junction/ Ambient Point	RTH_{J-A}	60	℃/W

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 10 seconds in T_{SD}

■ Typical Product Characteristics(Ta=25℃)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Forward Voltage	V_F	1.9	2.2	2.5	V	I_F=140mA
Luminous Intensity	Iv	6000	10100	-	mcd	I_F=140mA
Dominant Wavelength	λd	585	-	597	nm	I_F=140mA
Peak Wavelength	λp	-	592	-	nm	IF=140mA
Spectral Width 50%	Δλ	-	14	-	nm	IF=140mA
Reverse Current	I_R	-	-	10	μA	V_R= 10V
Viewing Angle	$2\theta_{1/2}$	-	120	-	Deg	I_F=140mA

Notes: 1. Measurement Errors:

Forward Voltage: ±0.1V, Luminous Intensity: ±10%Iv, Dominant Wavelength: ±1.0nm, Viewing Angle ($2\theta_{1/2}$): ±5%

2. Electrostatic Discharge Classification: HBM 1000V for blue LEDs

3. Electrical-Optical Characteristics (Ta=25℃)

■ Range of Bins

1) Forward Voltage (I_F = 140mA)

Bin Code	Min. V_F(V)	Max. V_F(V)
D	1.9	2.1
E	2.1	2.3
F	2.3	2.5

2) Luminous Intensity (I_F = 140mA)

Bin Code	Min. I_V(mcd)	Max. I_V(mcd)
22	6000	7800
23	7800	10100
24	10100	13130

■ Range of Bins

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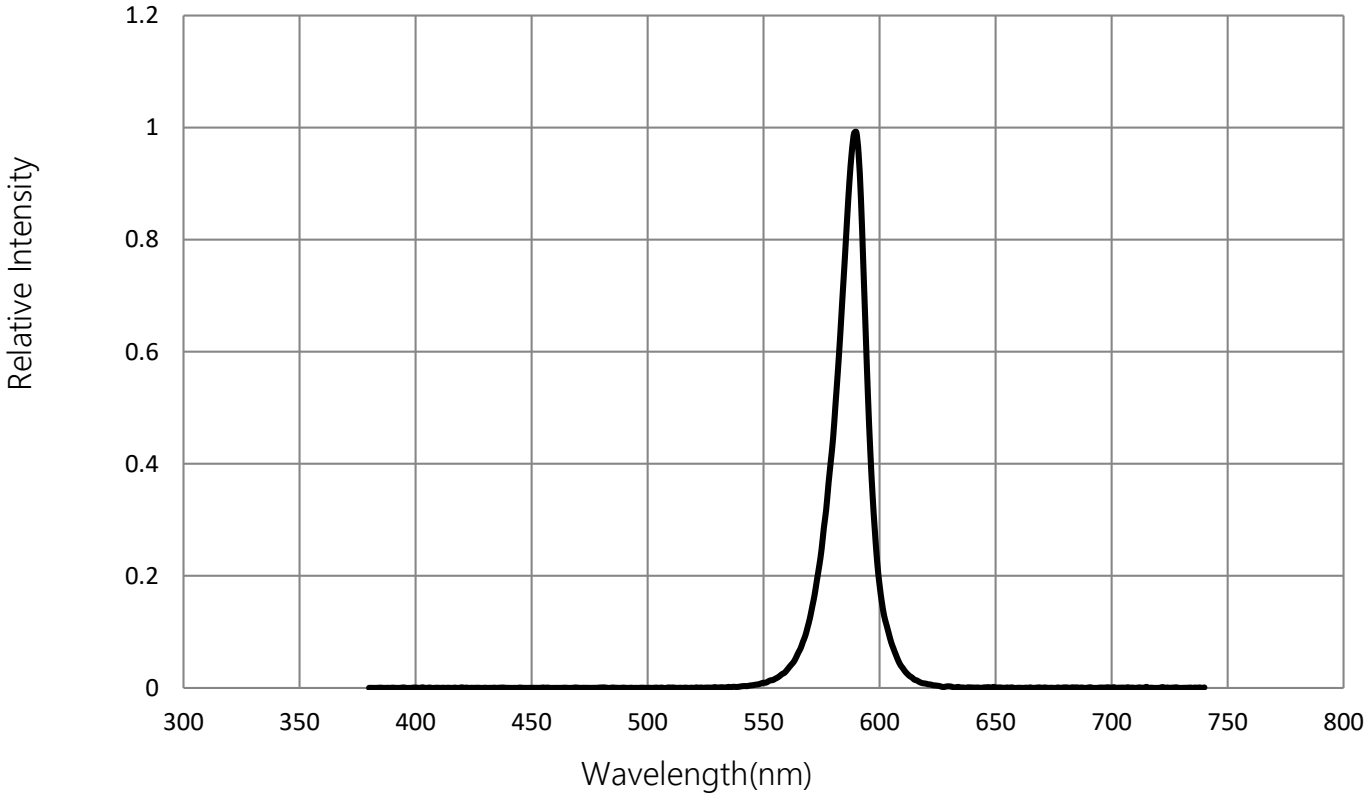
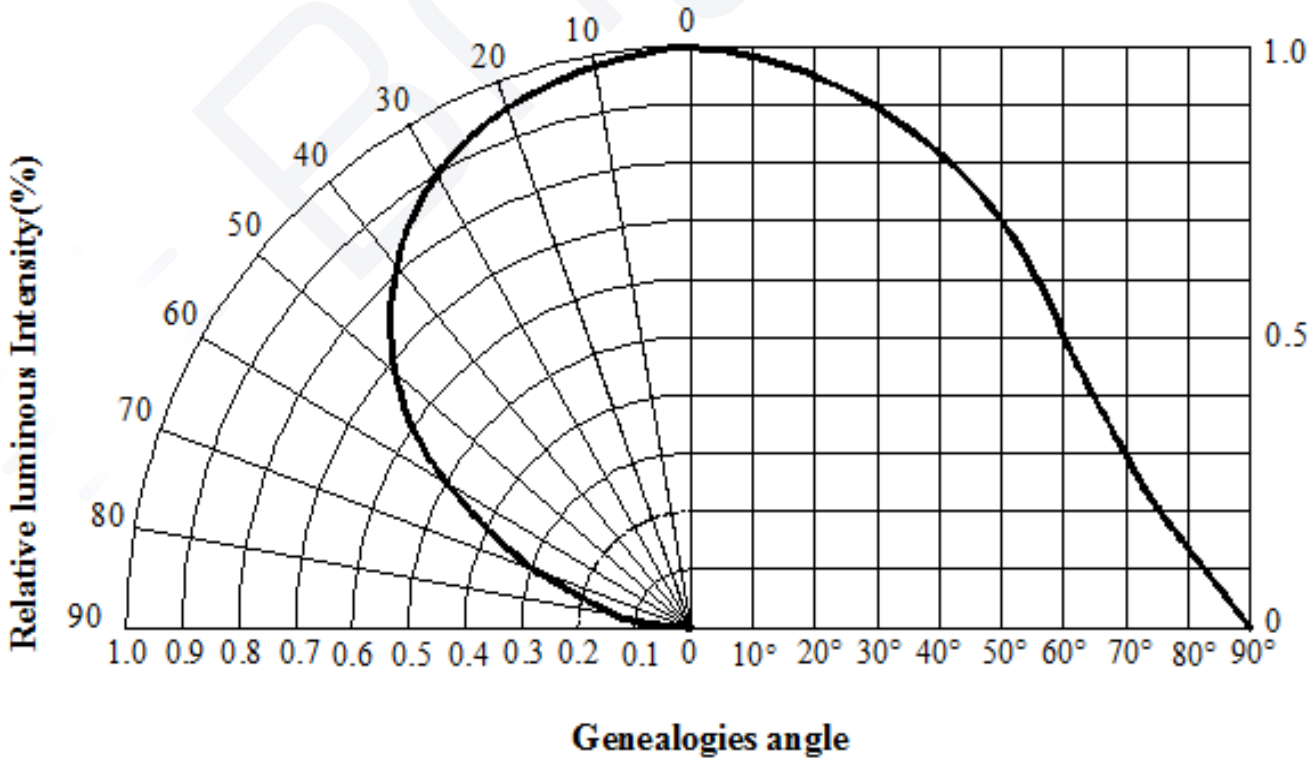
3) Dominant Wavelength (I_F =140mA)

Bin Code	Min.λd (nm)	Max.λd(nm)
C	585	588
D	588	591
E	591	594
F	594	597

■ Relative Spectral Power Distribution

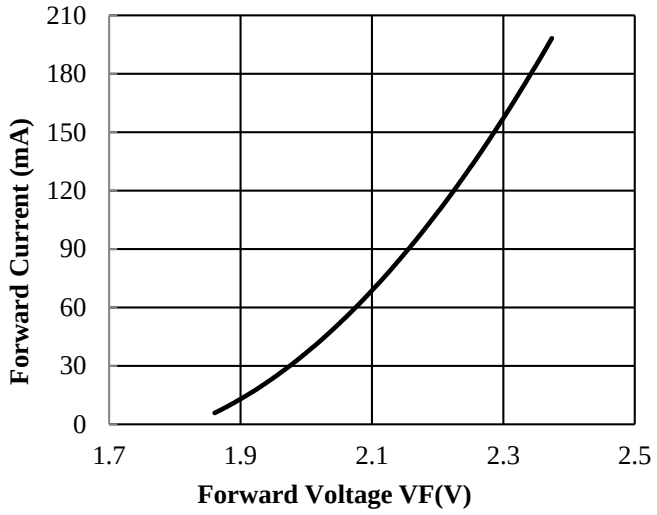


■ Typical Diagram Characteristics of Radiation

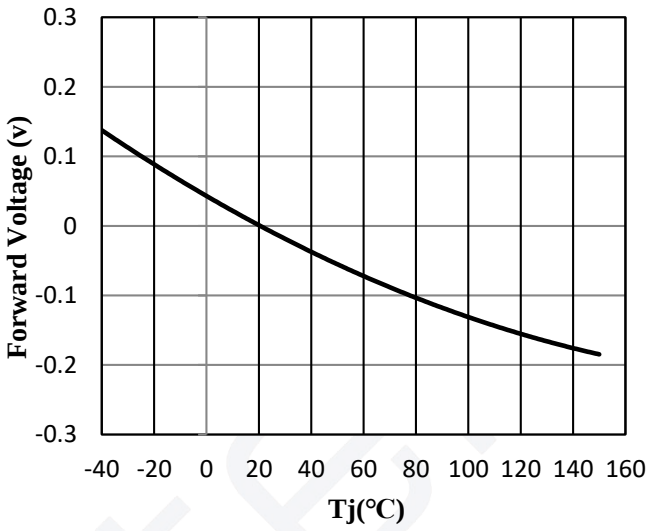


■ Electronic-Optical Characteristics

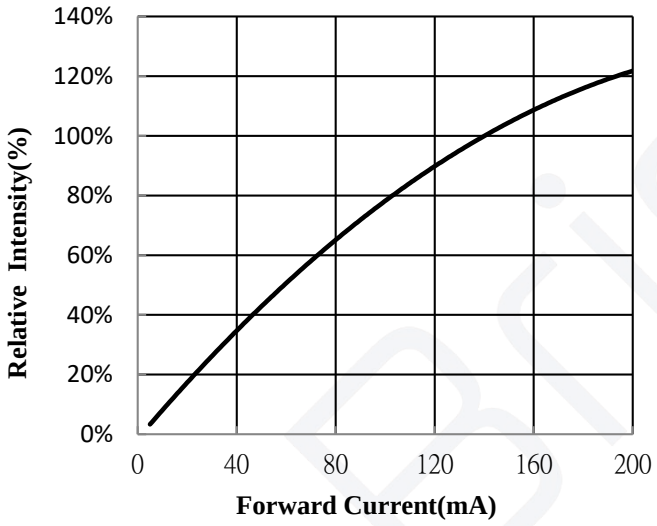
Forward Current vs. Forward Voltage



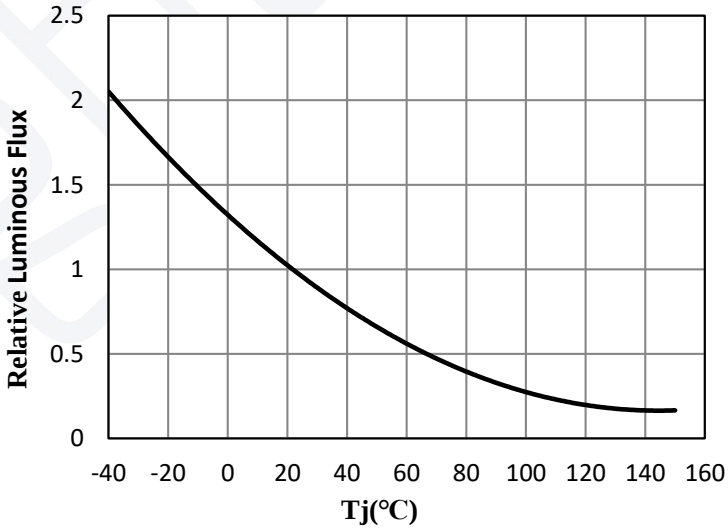
Forward Voltage vs. Junction Temperature



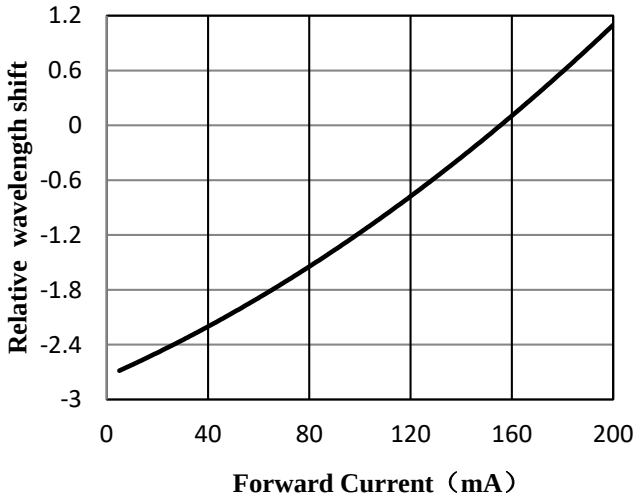
Relative Intensity vs. Forward Current



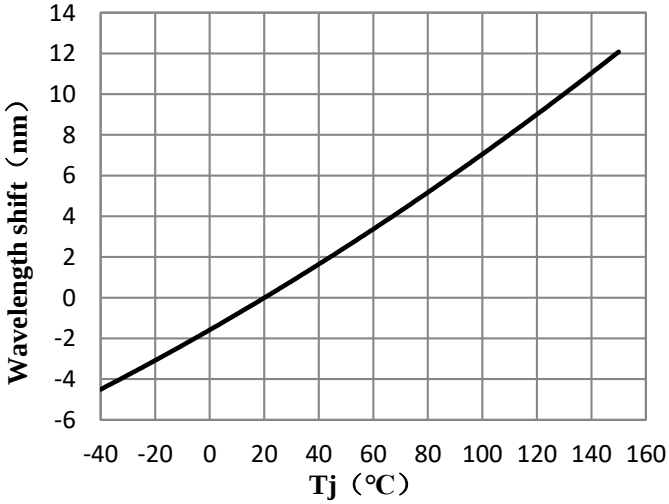
Relative Intensity vs. Junction Temperature



Relative wavelength shift vs. Forward Current

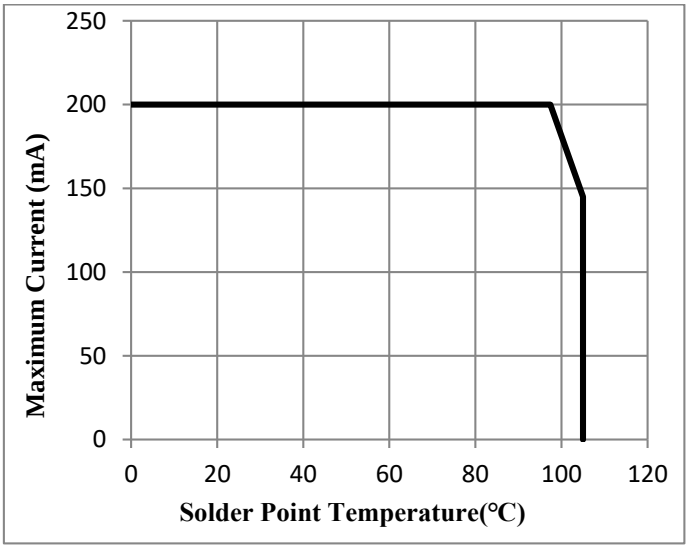


Wavelength shift vs. Junction Temperature

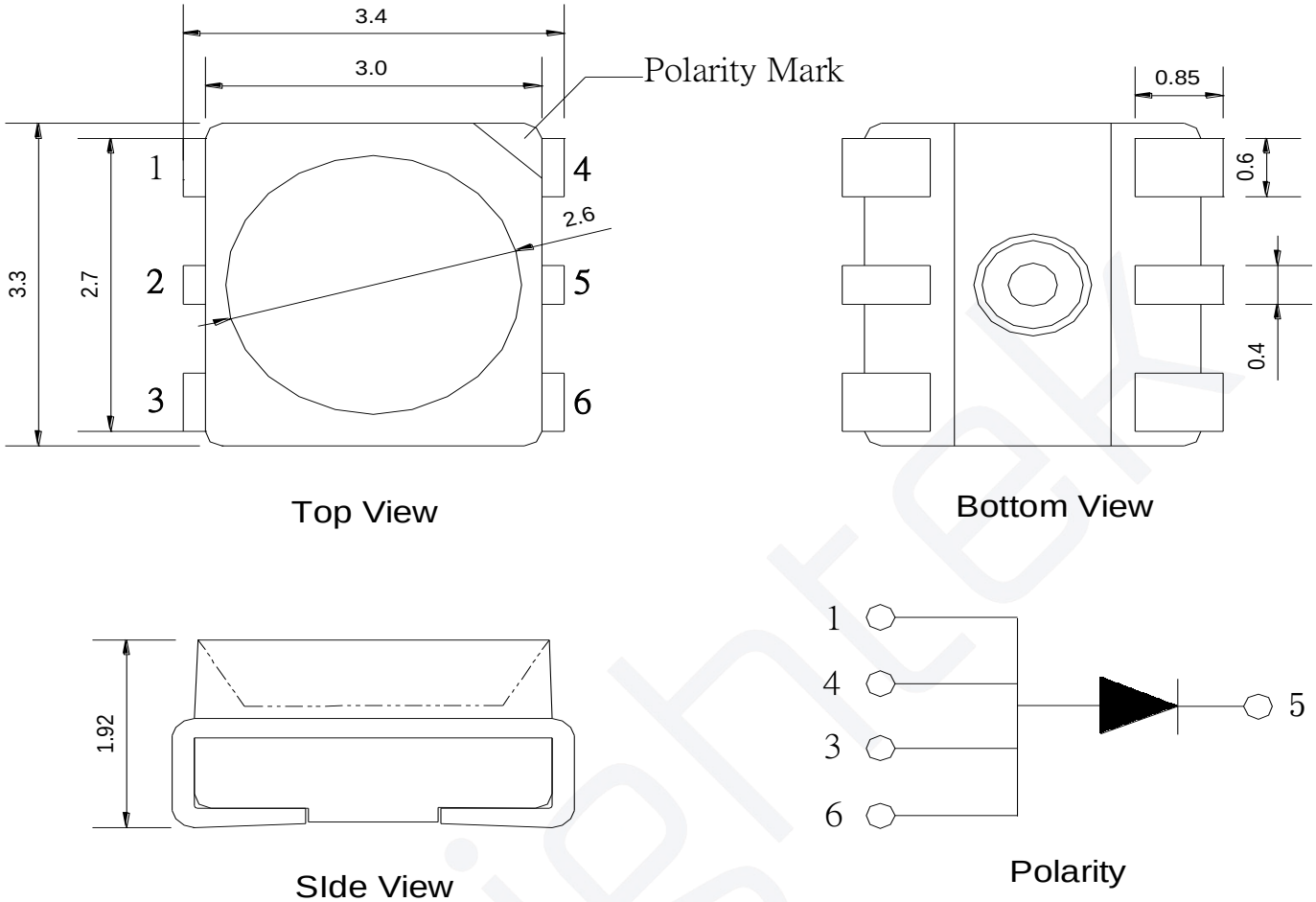


■ Thermal Design for De-rating

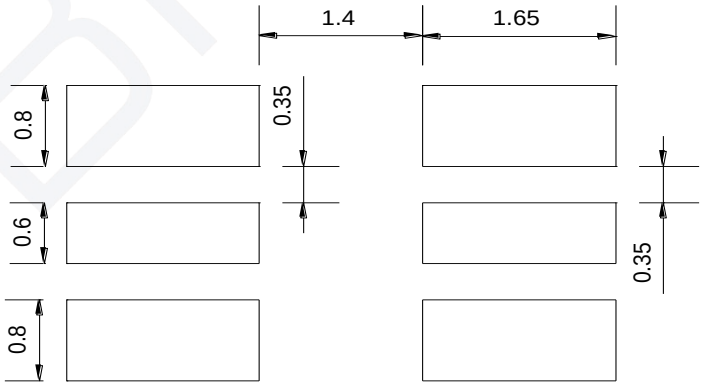
The maximum forward current is determined by the thermal resistance between the LED junction and solder point. It is crucial for the end product to be designed in a manner that minimizes the thermal resistance from the solder point to ambient in order to optimize lamp life and optical characteristics.



■ Dimensions



Recommend pad layout



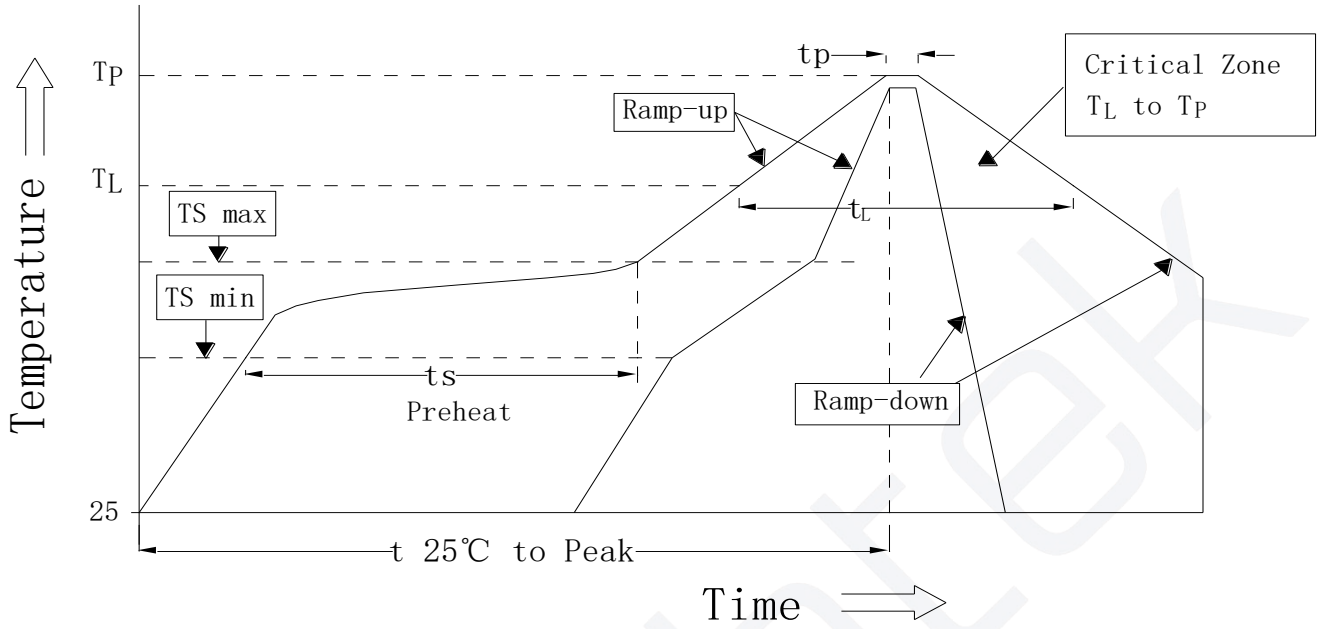
Notes: 1. All dimensions are in millimeters

2. Tolerance is ±0.1mm unless otherwise noted

3. Specifications are subject to change without notice.

■ Reflow Profile

SMT Reflow Soldering Profile



Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		Min.	Recommendation	Max.	
Ramp-up rate to preheat (25℃ to 150℃)	-	-	2	3	K/s
Time t_S ($T_{S\ min}$ to $T_{S\ max}$)	t_S	60	100	120	s
Ramp-up rate to peak ($T_{S\ max}$ to T_P)	-	-	2	3	K/s
Liquidus temperature	T_L	-	217	-	°C
Time above liquidus temperature	t_L	-	80	100	s
Peak temperature	T_P	-	245	260	°C
Time within 5 ℃ of the specified peak temperature T_P - 5 K	t_P	-	-	10	s
Ramp-down Rate (T_P to 100 ℃)	-	-	3	4	K/s
Time 25 ℃ to T_P	-	-	-	480	s

Notes:

1. Do not stress the silicone resin while it is exposed to high temperature.
2. The reflow process should not exceed 3 times.

■ Test Circuit and Handling Precautions

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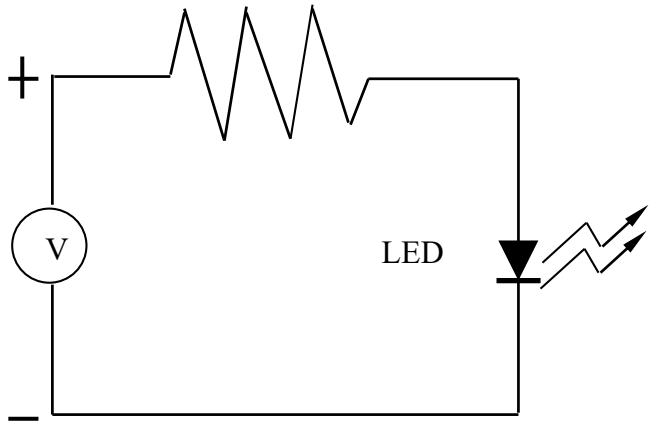
1. Test Circuit



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 four weeks or they should be keeping to stored at ≦20%R.H. with zip-lock sealed.

2.3. Baking

If the package has been opened for more than 4 weeks, it is recommended to bake the products with the following instruction:

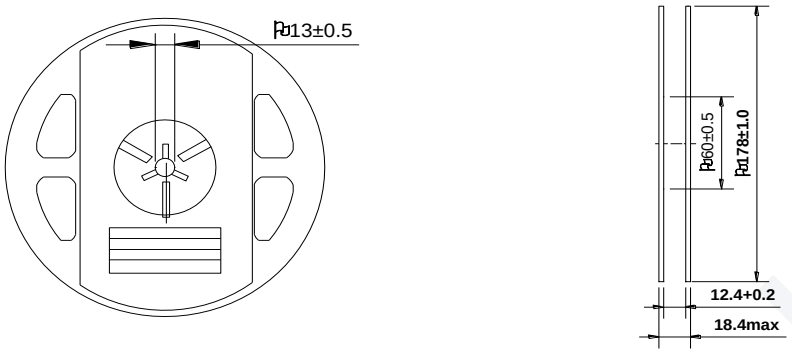
1). 60±3℃ X 6hrs and ＜5%RH, for reel

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

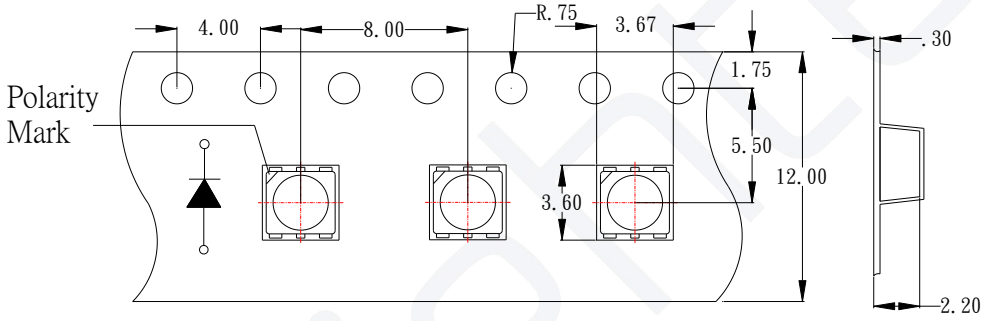
■ Packing

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

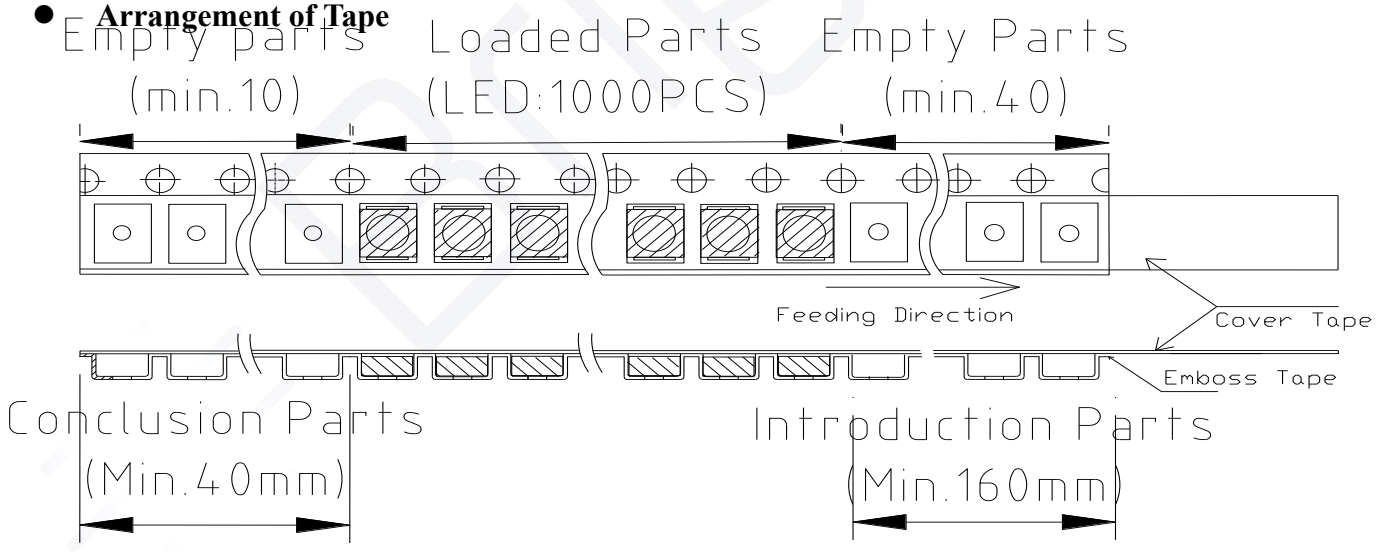


Note: 01.The tolerance unless mentioned is ±0.1mm.
02.The measured unit is "mm".

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



- **Arrangement of Tape**

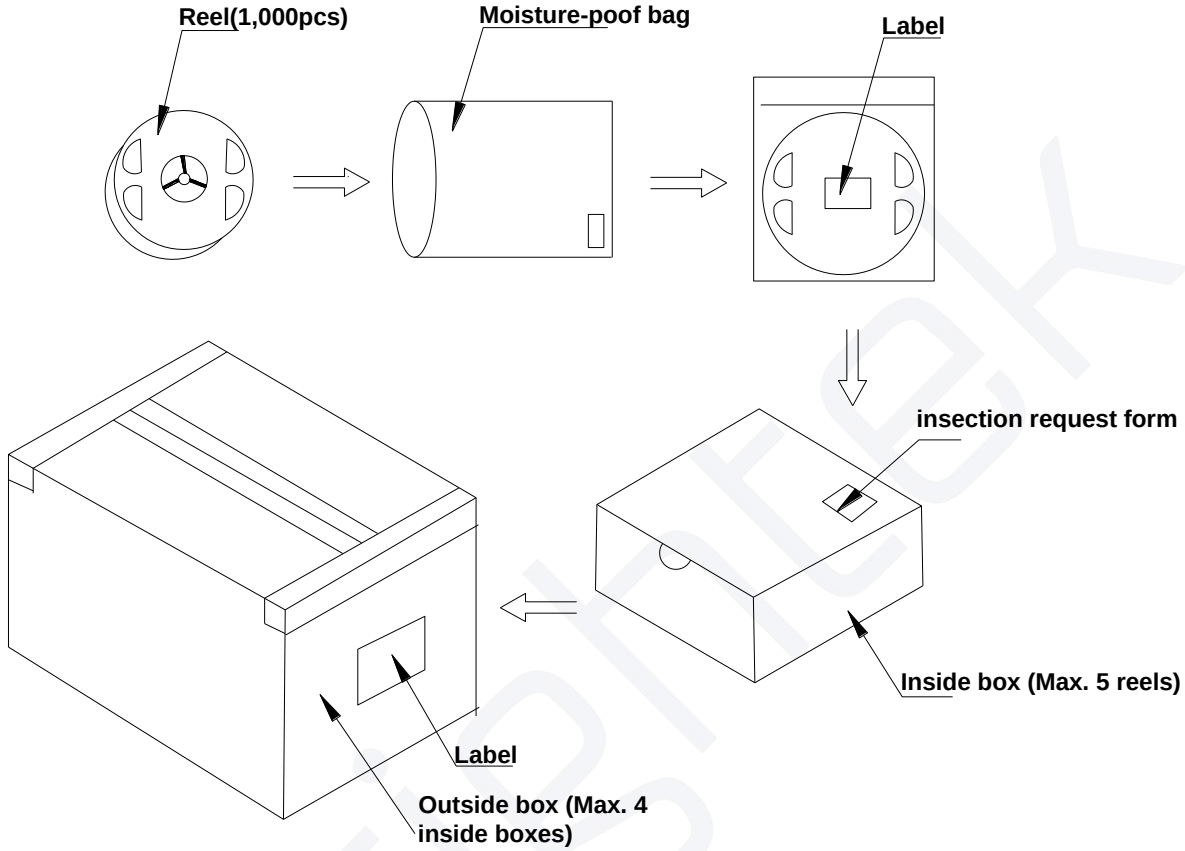


Notes:

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. 1,000pcs per reel
5. The remainder packing in multiples of 500pcs.

■ Packing

- **Packaging Specifications**



Notes:

Reeled product (max.1,000) is packed in a sealed moisture-proof bag. Five 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 215 mm). 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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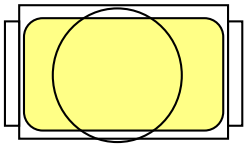
1. Abnormal situation caused by improper setting of collet

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

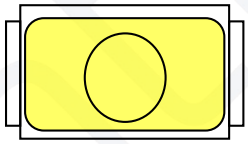
2. How to choose the collet

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.