



1SC3535VGBW0MF0A



- ◆Outline (L* W*H): 3.7*3.5*1.8mm
- ◆Good thermal dissipation & optical uniformity

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Features

- Forward current: $\leq 30\text{mA}$
- Typical view angle 50% Iv: 120°
- Lens color: white diffused / yellowish
- RoHS2.0 and REACH-compliant
- Qualified according to JEDEC moisturevity Level 5a
- ESD level 1kV(HBM)

Applications

- Amusement
- Indoor lighting
- Architecture lighting
- Decorative lighting

■ Product Code Method

1 - S - C - 3535 - VGBW - 0 - M - F - 0A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	②	③	④	⑤
Process Type	Category	LED Type	Lead Frame Size	Dice wavelength & luminous rank
1: normal process	S: SMD LED	C: PLCC top view D: PLCC side view	3535: 3.7*3.5mm	V:red G:green B:blue W:White

⑥	⑦	⑧	⑨
Lap Polarity	Cap Color	PCB Module Code	Flow Code
0: non-common anode and non-common cathode	M: white diffused / yellowish	F: article mode	0A: no expression above meaning for company

■ Maximum Rating(Ta=25℃)

Characteristics	Symbol	Rating	Unit
DC Forward Current	I _F	30	mA
Pulse Forward Current ^{*3}	I _{PF}	70	mA
Reverse Voltage	V _R	5	V
Junction Temperature	T _J	110	°C
Operating Temperature Range	T _{OP}	-40~85	°C
Storage Temperature Range	T _{STG}	-40~100	°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 10 seconds in T_{SD}

■ **Typical Product Characteristics(Ta=25℃)**

Characteristics	Symbol		Min.	Typ.	Max.	Unit	Test condition
Forward Voltage	V_F	R	1.9	-	2.5	V	$I_F=20mA$
		G	2.8	-	3.4		
		B	2.8	-	3.4		
		W	2.8	-	3.4		
Reverse Current	I_R		-	-	10	μA	$V_R=5V$
Luminous Intensity	I_v	R	440	750	1300	mcd	$I_F=20mA$
		G	850	1500	2050		
		B	210	370	620		
		W	1100	1900	3000		
Dominant Wavelength	λ_d	R	618	-	628	nm	$I_F=20mA$
		G	520	-	530		
		B	460	-	475		
Color Coordinate	RGB	x		0.258			$I_F=20mA$
		y		0.245			
	W	x		0.434			
		y		0.403			
View Angle	$2\theta_{1/2}$		-	120	-	deg	$I_F=20mA$

Notes: 1. Measurement Errors:

Forward Voltage: $\pm 0.1V$, Luminous Intensity: $\pm 10\%I_v$, Dominant Wavelength: $\pm 1.0nm$

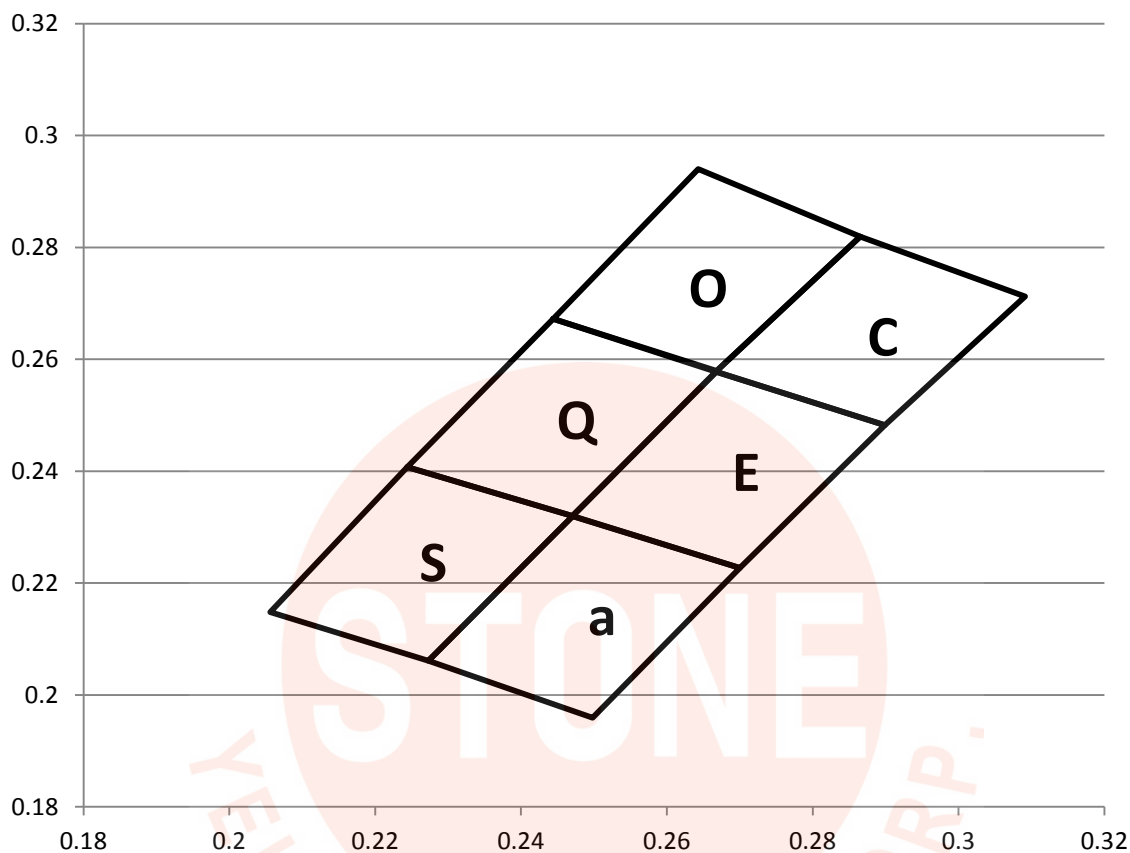
2. Electrical-Optical Characteristics (Ta=25℃)

3. We will amend the Bin code to maintain Bin Code centralize,

4. And we get the Luminous Intensity is 1.3double per Bins and the Dominant Wavelength is 5/5/5nm of R/G/B per Bins and white balance



■ Color Coordinate Comparison-RGB

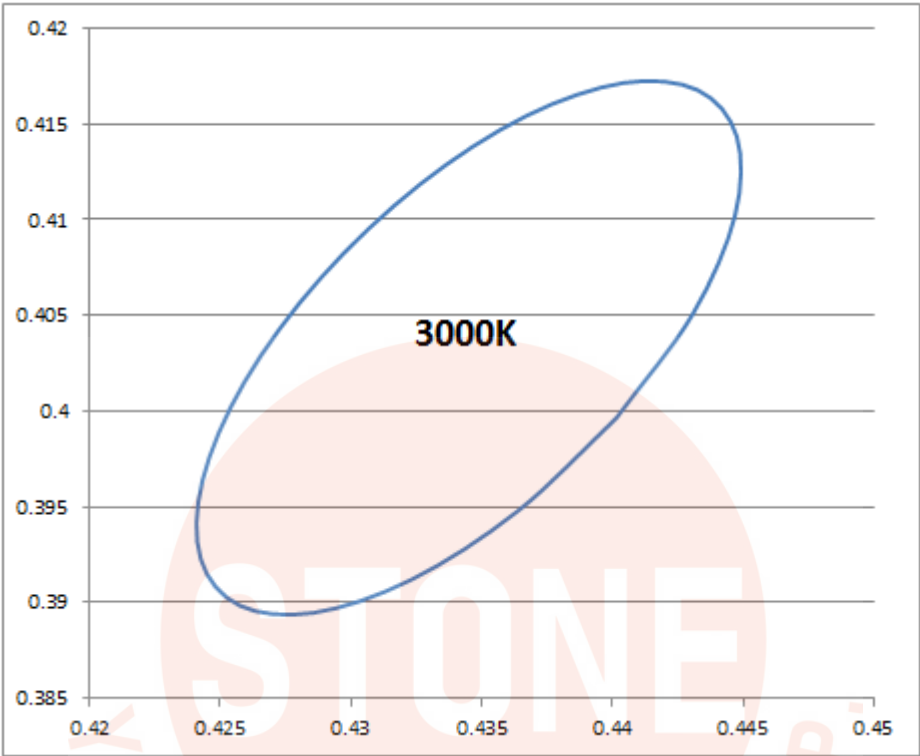


Color Rank

Bin	X	Y	X	Y	X	Y	X	Y
O	0.2444	0.2672	0.2643	0.294	0.2865	0.2819	0.2667	0.2578
C	0.2865	0.2819	0.3091	0.2712	0.2899	0.2482	0.2667	0.2578
Q	0.2444	0.2672	0.2244	0.2407	0.2471	0.232	0.2669	0.2579
E	0.2667	0.2578	0.2899	0.2482	0.27	0.2227	0.247	0.232
S	0.2244	0.2407	0.2056	0.2148	0.2273	0.2061	0.2471	0.232
a	0.2471	0.232	0.2273	0.2061	0.2498	0.1959	0.27	0.2227



■ Color Coordinate Comparison-White

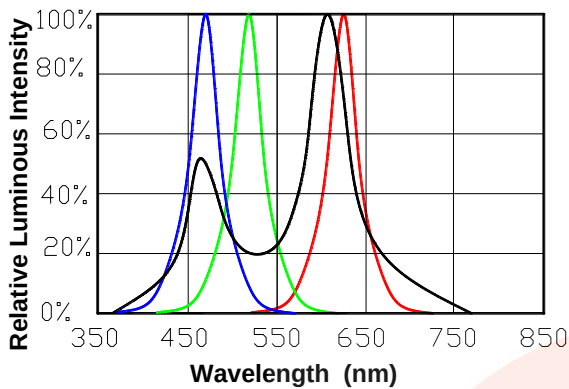


Color Code	Center		Radius		Angle (deg)	g11	g12	g22
	x	y	a	b				
3000k	0.4345	0.4033	0.00321	0.00135	56.9675	416226.3809	-207671.6569	231868.7753

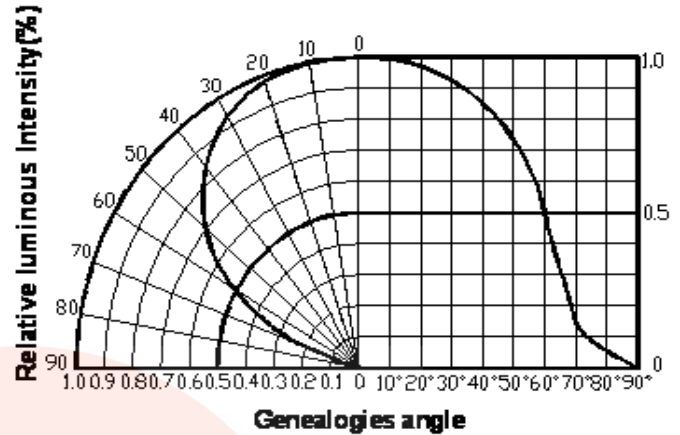
Note: MacAdam Ellipses 5 step

Electronic-Optical Characteristics

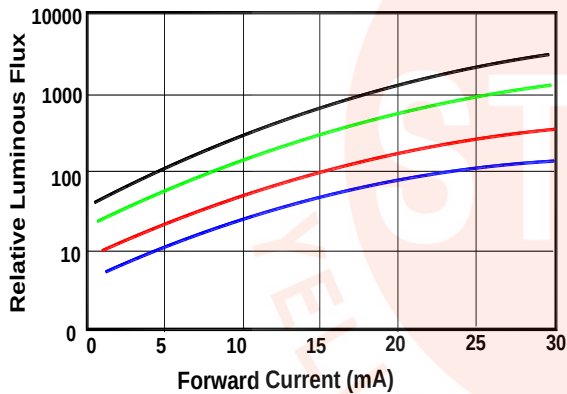
1). Relative Spectral Distribution



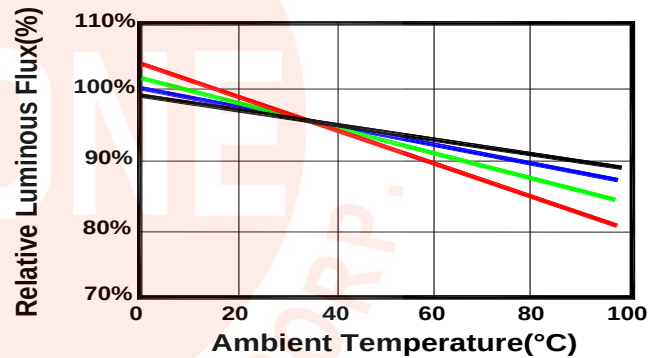
2). Typical Spatial Distribution



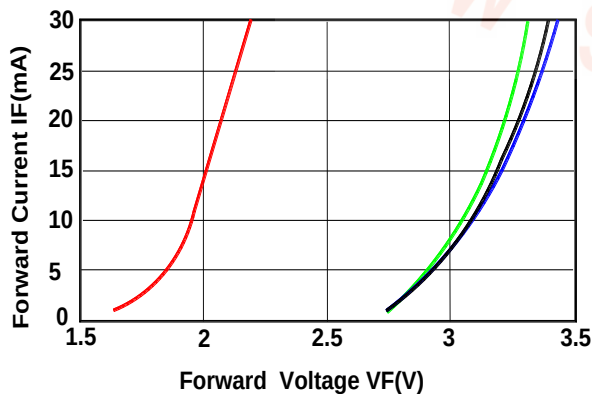
3). Relative Luminous Flux .Current



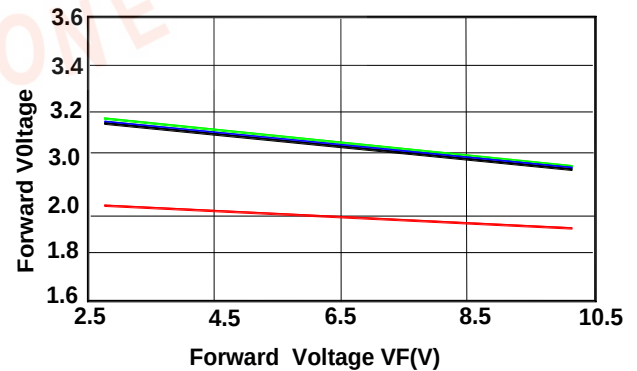
4). Relative Luminous Flux .Ambient Temperature



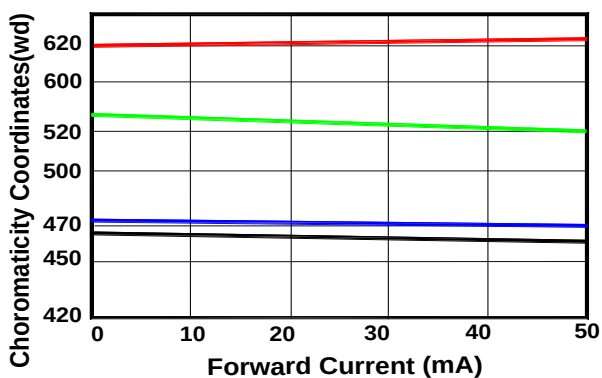
5). Forward Current. Forward Voltage



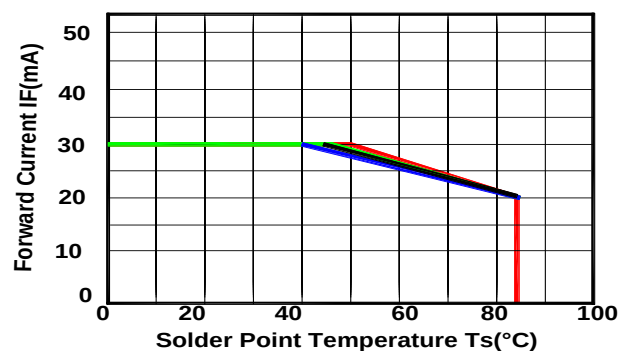
6). Forward Voltage Temperature



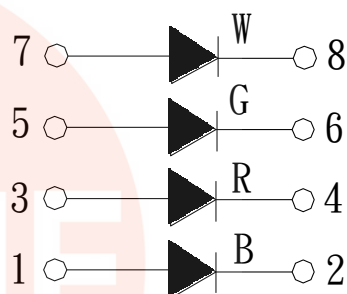
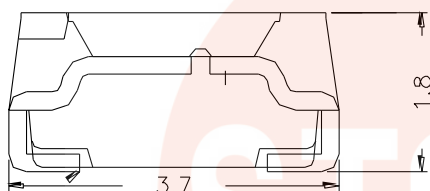
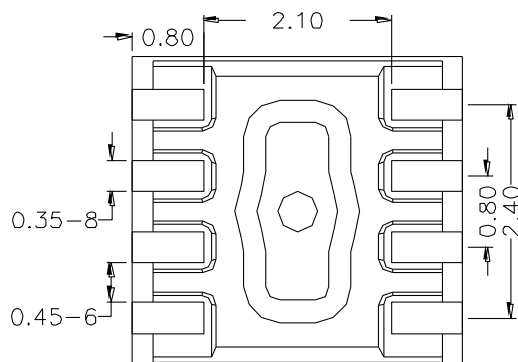
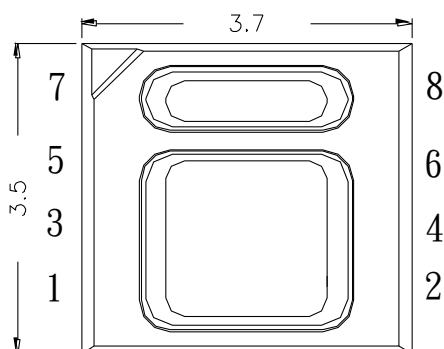
7). Wavelength and Current



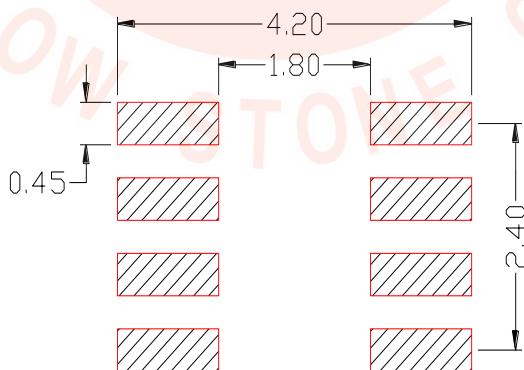
8). Thermal Design(R/G/B/W 1 chip on light)



■ Dimensions



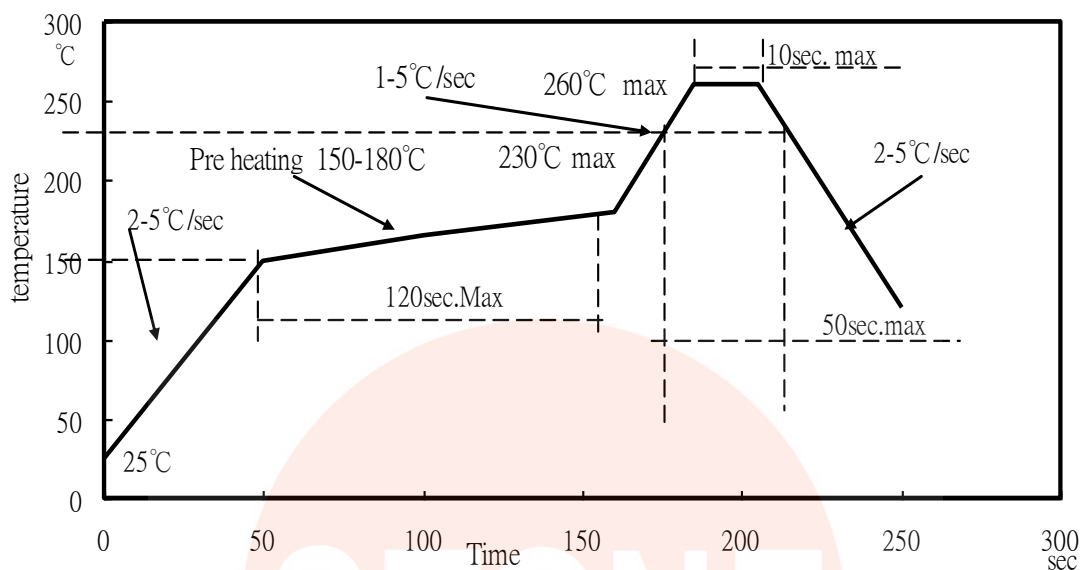
Recommend Padlayout



- § All dimensions are in millimeters.
- § Tolerance is $\pm 0.1\text{mm}$ unless other specified
- § Specifications are subject to change without notice

■ Reflow Profile

1. I_R reflow soldering Profile for Lead Free solder

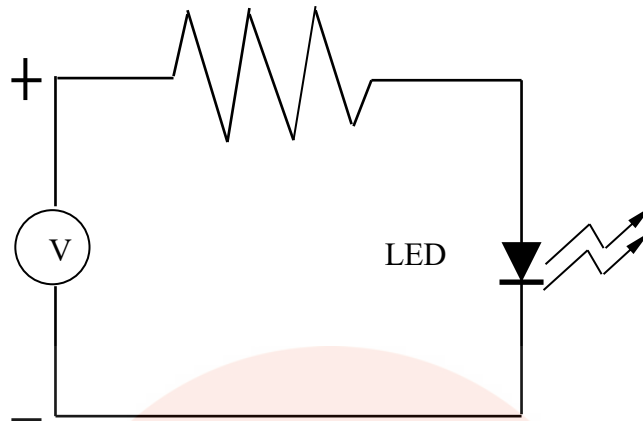


Notes:

1. We recommend the reflow temperature 240°C ($\pm 5^\circ\text{C}$).the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall not be more than 2 time.

■ Test Circuit and Handling Precautions

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 : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ ($41^{\circ}\text{F} \sim 86^{\circ}\text{F}$)

2). Shelf life in sealed bag: 12 month at $<5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ and $<60\%$ R.H. after the package is Opened, the products should be used within 48 hours or they should be keeping to stored at $\leq 20\%$ R.H. with zip-lock sealed.

2.3. Baking

Suggest packing opened after 24 hours, before use baking products, conditions as follows:

The Conditions are as followings:

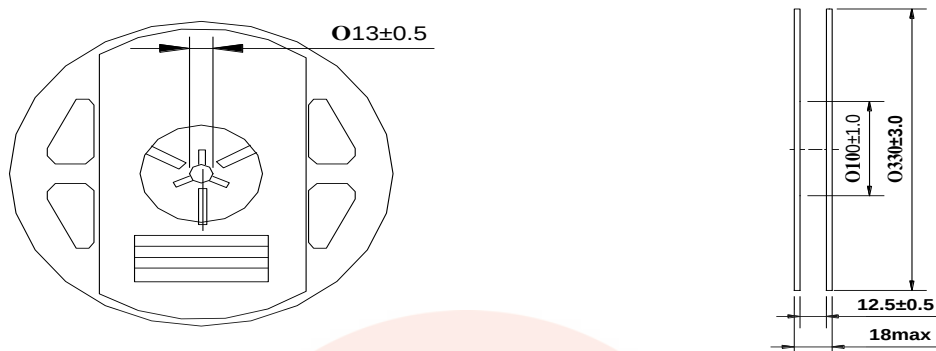
1). $60 \pm 3^{\circ}\text{C}$ X 6hrs and $<5\%$ RH, for reel

2). $125 \pm 3^{\circ}\text{C}$ X 2hrs, for single LED

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

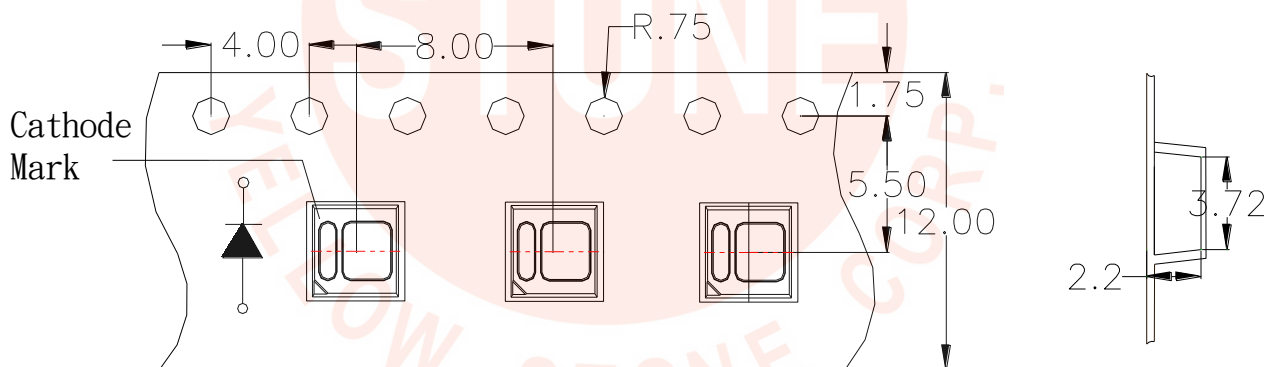
■ Packing

● Dimensions of Reel (Unit: mm)

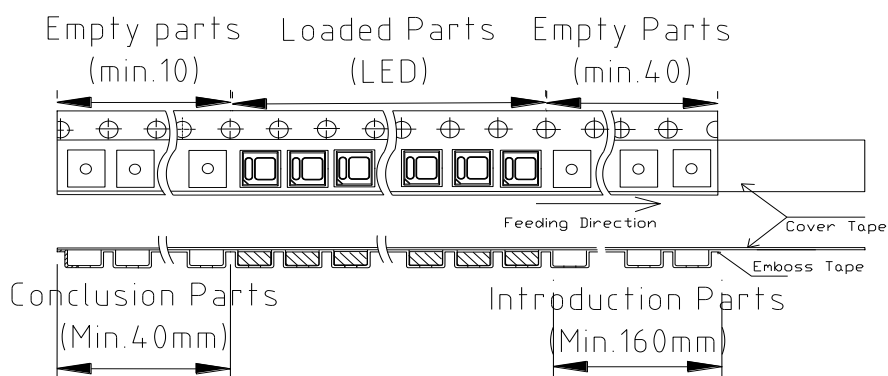


Note: 01.The tolerance unless mentioned is $\pm 0.2 \text{ mm}$.
02.The measured unit is "mm".

● Dimensions of Tape (Unit: mm)



● Arrangement of Tape

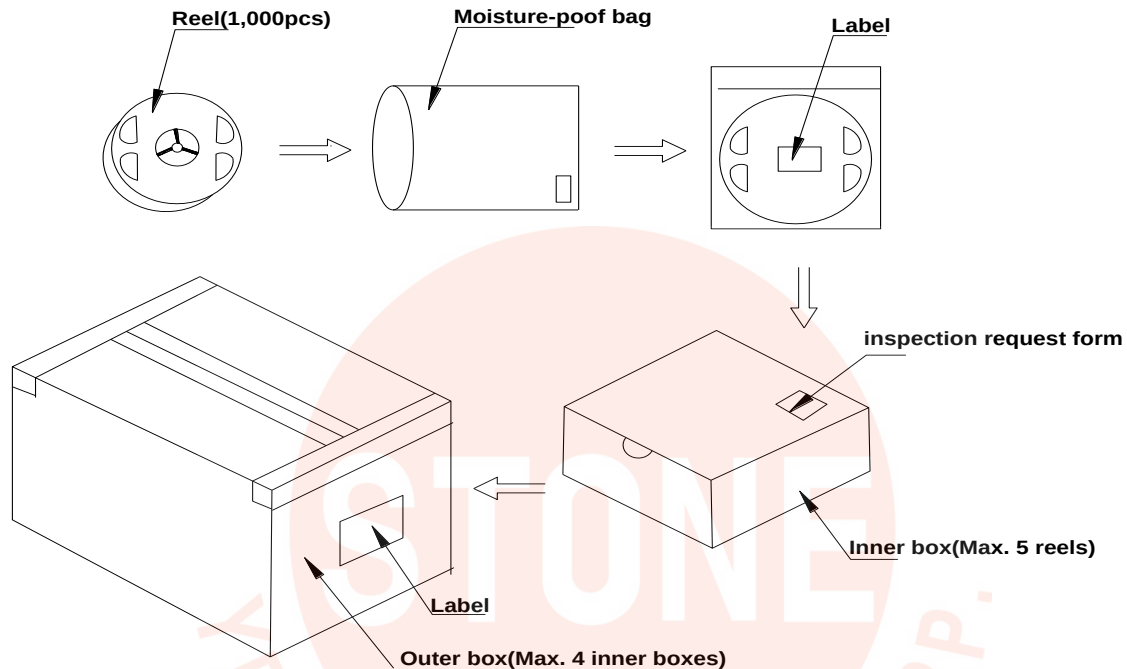


Notes:

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. 1000pcs per reel

■ Packing

● Packaging specifications



Notes:

1. Each reel (minimum number of pieces is 100 and maximum is 1000) is packed in a moisture-proof bag along with a packs of desiccant and a humidity indicator card.
2. A maximum of 5 moisture-proof bags are packed in an inner box (size: 260mm x 230mm x 100mm $\pm$ 5mm).
3. A maximum of 4 inner boxes are put in an outer box (size: 480mm x 275mm x 215mm $\pm$ 5mm).
4. Part No., Lot No., quantity should be indicated on the label of the moisture-proof bag and the cardboard box.

■ Precautions

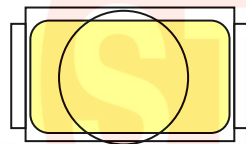
1. Abnormal situation caused by improper setting of collet

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

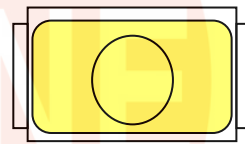
2. How to choose the collet

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 (1 chip on light)	Ta=23°C(±5°C) I _F =20mA	1008 hrs	0/1	0/22	JESD22 A-108
High Temperature Life (1 chip on light)	Ta=85°C(±5°C) I _F =20mA	1008 hrs	0/1	0/22	JESD22 A-108
High Humidity Heat Life (1 chip on light)	Ta=85°C(±5°C) RH=85% I _F =20mA	1008 hrs	0/1	0/22	JESD22 A-108
Thermal shock	-45°C/30min~105°C /30min (±5°C)	1008 hrs	0/1	0/22	JESD22 A-104
Electrostatic Discharge (ESD) Test(1 chip on light)	According to the SPEC	3 cycles	0/1	0/22	AEC Q101-001
Low Temperature Storage	T _a =-40°C	1008 hrs	0/1	0/22	JESD22-A103D
High Temperature Storage	T _a =100°C	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 =20mA	-	USL* ¹ ×1.1
Reverse Current	I _R	V _R = 5V	-	10μA
Luminous Intensity	I _v	I _F =20mA	LSL* ² ×0.7	-

[Note] USL*¹: Upper Specification Level

LSL*²: Lower Specification Level