V63030VGBMLN1 Datasheet

Outline (L* W*H): 3.0*3.0*0.65mm

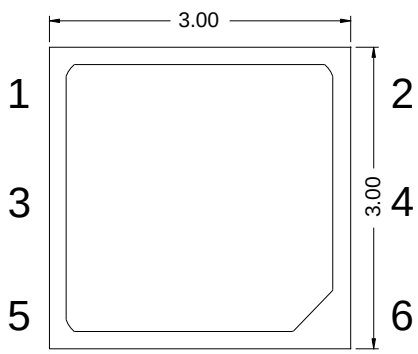
Applications

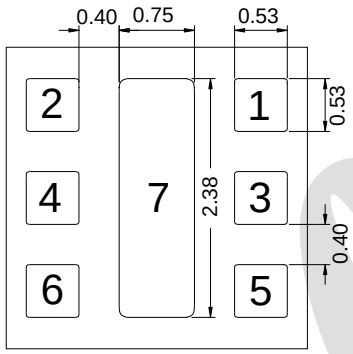
- Automotive interior light

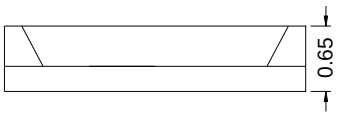
Features

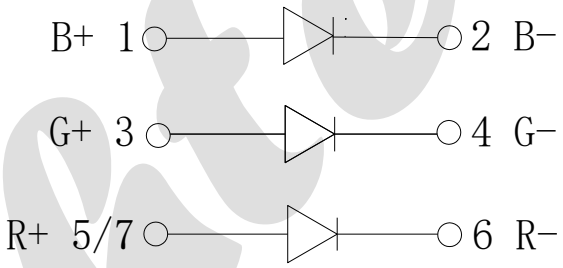
- Forward current: ≦250mA ;
- Typical view angle 50% Iv:120°
- Qualified according to JEDEC moisture sensitivity Level 2a
- Glue color: water transparent
- Emitting color: V:red G:green B:blue
- RoHS2.0 and REACH-compliant
- ESD level 2kV(HBM)
- AEC-Q102 Qualified

Dimensional Drawing

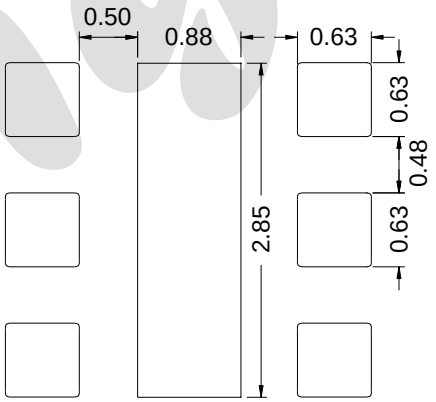








Recommend Pad layout



1. Dimensions are in millimeters.
2. General tolerance is ± 0.1mm.

Naming Rule

V6-3030-VGB-M-L-N1

V6	3030	VGB	M	L	N1
Type	Package Size	Color	Lens color	Output current	Serial number
V6: Special product	3030：3.0*3.0mm	V : red G : green B : blue	M:White diffused	L:150mA	N1: Serial number

Maximum Ratings

T_A : 25 °C

Parameter	Symbol		Values	Unit
Forward current	I_F	max.	250	mA
Pulse forward current	I_{PF}	max.	500	mA
Reverse voltage	V_R	max.	5	V
Junction temperature	T_j	max.	150	°C
Operating temperature	T_{op}	min. max.	-40 125	°C
Storage temperature	T_{stg}	min. max.	-40 125	°C
Soldering temperature	T_{SD}	max.	260	°C
Thermal Resistance Junction/ Solder Point	R_{THJ-S}	max.	Red = 23 Green = 35 Blue = 35	°C /W

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 $T_{SD.}$

Characteristics

IF : 150mA | TA : 25 °C

Parameter	Symbol		Min	Typical	Max	Unit
Forward Voltage	V_F	V	2.0		2.6	V
		G	3.0		3.6	
		B	3.0		3.6	
View angle	$2\theta_{1/2}$			120		deg
Luminous Flux	I_V	V	14	-	20	lm
		G	38	-	50	
		B	8	-	13	
Dominant Wavelength	λd	V	630	-	636	nm
		G	524	-	529	
		B	455	-	460	
Reverse Current	I_R				10	μA

1. Tolerance of Measure:

   Forward Voltage: ±0.1V, Luminous Flux: ±10%lm, Dominant Wavelength: ±1.0nm

Bin groups

1. Luminous FLux (IF=150mA)

Bin code		Values		Unit
V	16	min.	14	lm
		max.	17	
	17	min.	17	
		max.	20	
G	19	min.	38	
		max.	44	
	20	min.	44	
		max.	50	
B	10	min.	8	
		max.	10	
	11	min.	10	
		max.	13	

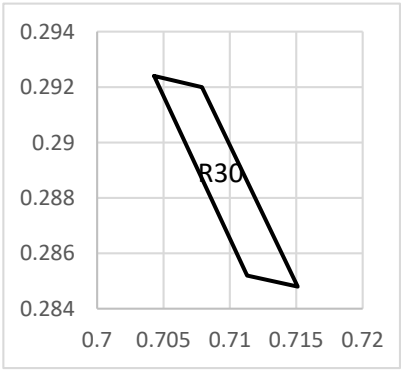
2. Forward Voltage (IF=150mA)

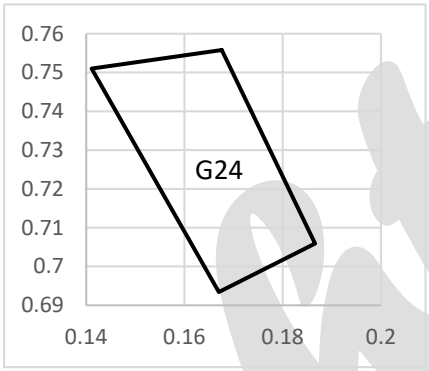
Bin code	Values		Unit
V	min.	2.0	V
	max.	2.6	
G	min.	3.0	
	max.	3.6	
B	min.	3.0	
	max.	3.6	

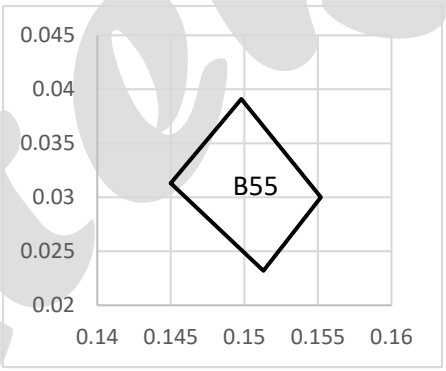
3. Dominant Wavelength Bins (IF=150mA)

Bin code	Values		Unit
V	min.	630	nm
	max.	636	
G	min.	524	
	max.	529	
B	min.	455	
	max.	460	

4. Chromaticity Coordinate Groups

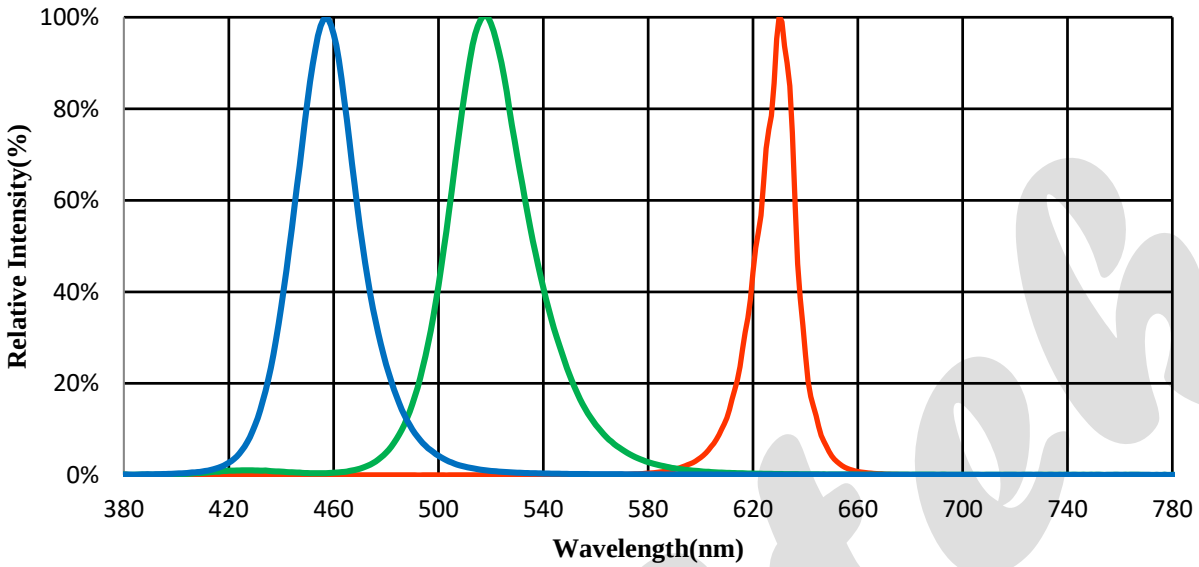




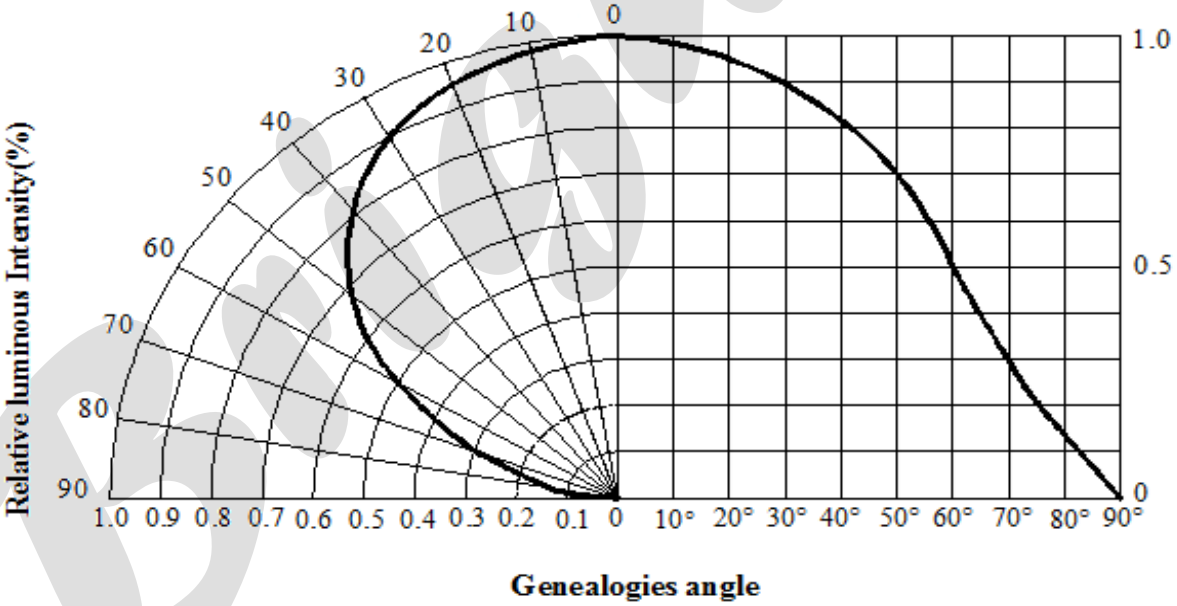


Bin	X	Y	X	Y	X	Y	X	Y
R30	0.7043	0.2924	0.7079	0.292	0.7151	0.2848	0.7113	0.2852
G24	0.1676	0.7558	0.1411	0.751	0.167	0.6934	0.1866	0.7059
B55	0.145	0.0313	0.1513	0.0232	0.1552	0.03	0.1498	0.0391

Relative Spectral Power Distribution

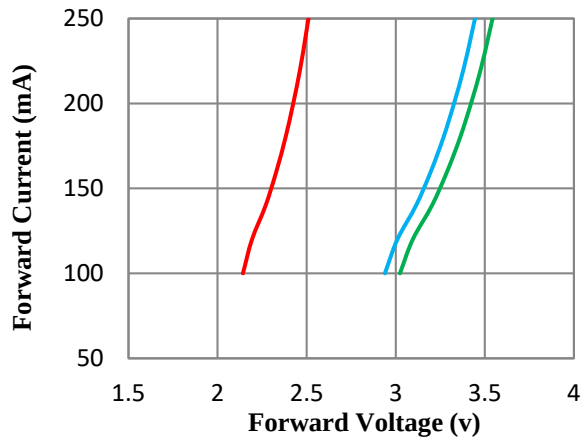


Typical Diagram Characteristics of Radiation

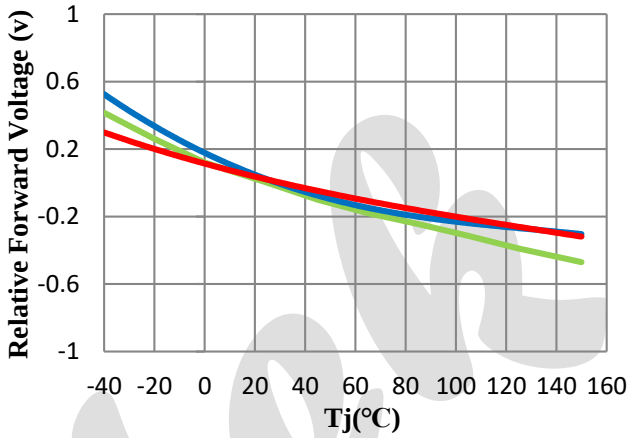


Electronic-Optical Characteristics

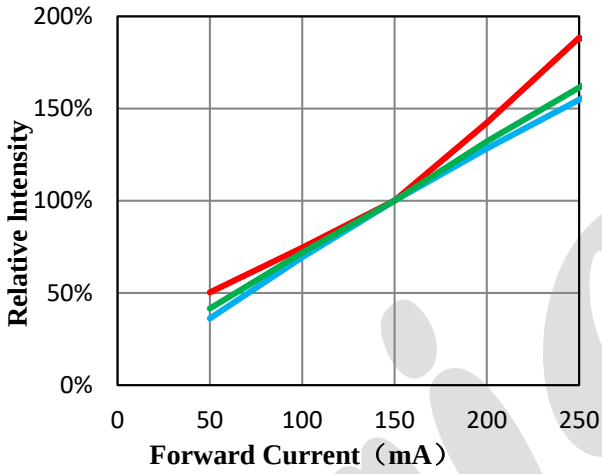
Relative Forward Current vs. Forward Voltage Temperature



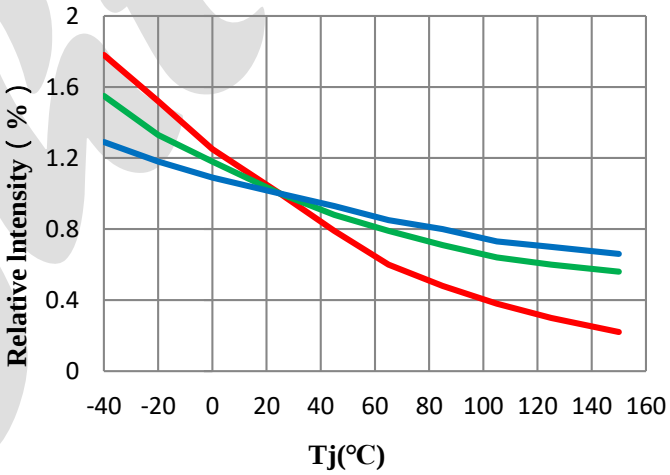
Relative Forward Voltage vs. Temperature



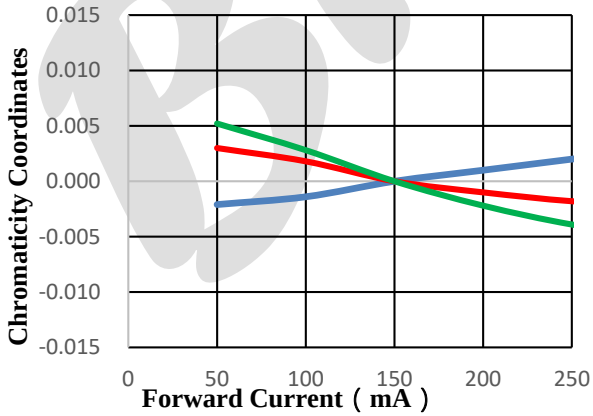
Relative Intensity vs. Forward Current



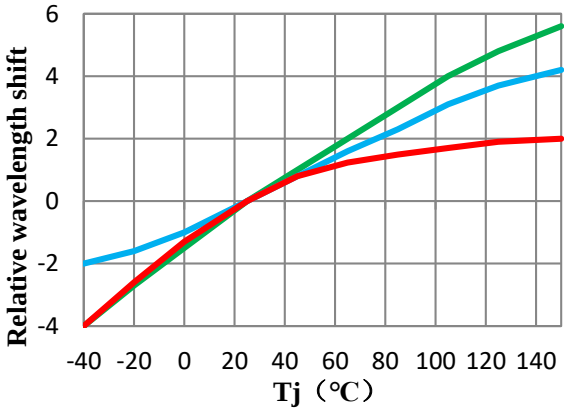
Relative Intensity vs. Temperature



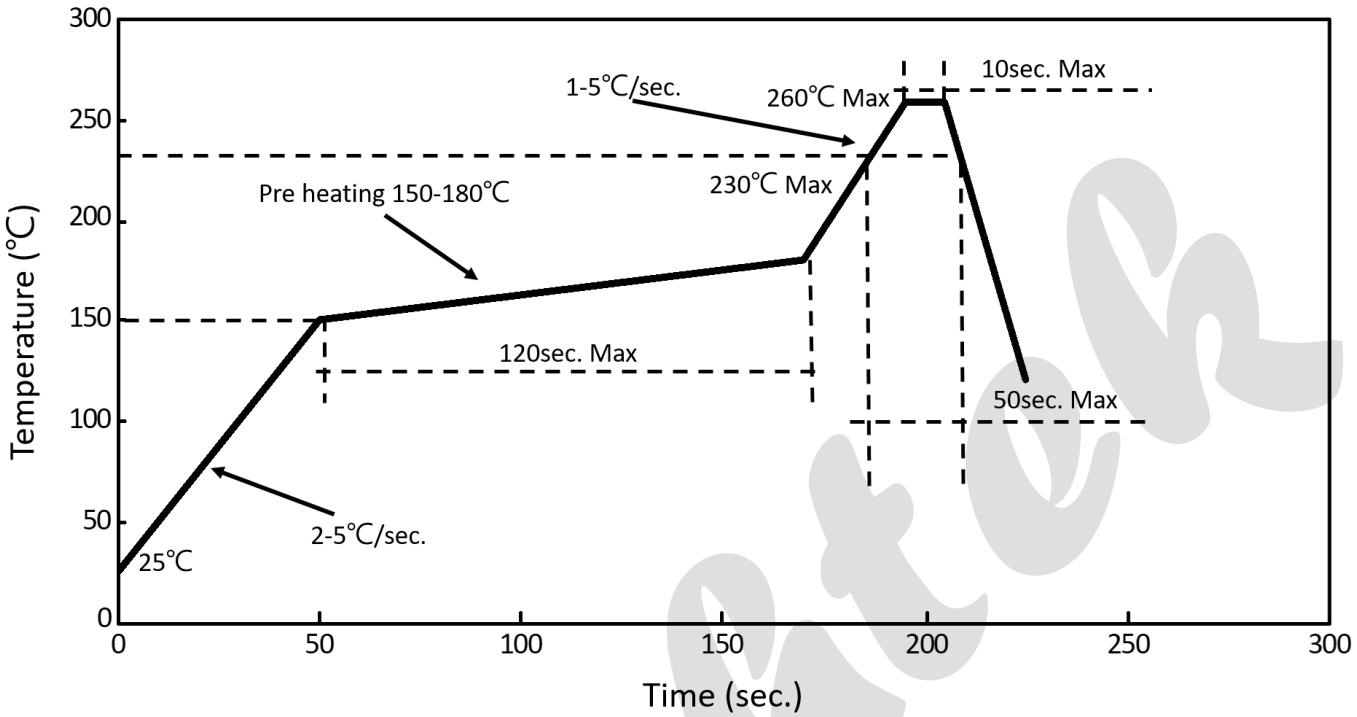
Chromaticity Coordinates vs. Forward Current



Wavelength shift vs. Temperature



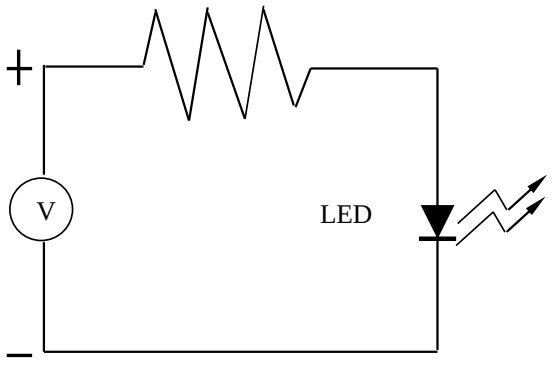
Reflow Soldering Profile



1. We recommend the reflow temperature 240℃ (±5℃).the maximum soldering temperature should be limited to 260℃.
2. Do not stress the silicone resin while it is exposed to high temperature.
3. The reflow process should not exceed 3 times.

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℃~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 storage at ≦20%R.H. with zip-lock sealed.

2.3 Baking

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

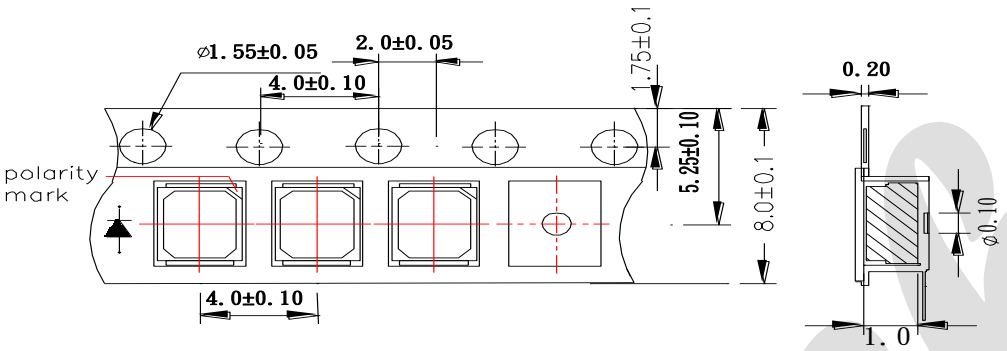
① 60±3℃ X 6hrs and ＜5%RH, for reel

② 125±3℃ X 2hrs, for single LED

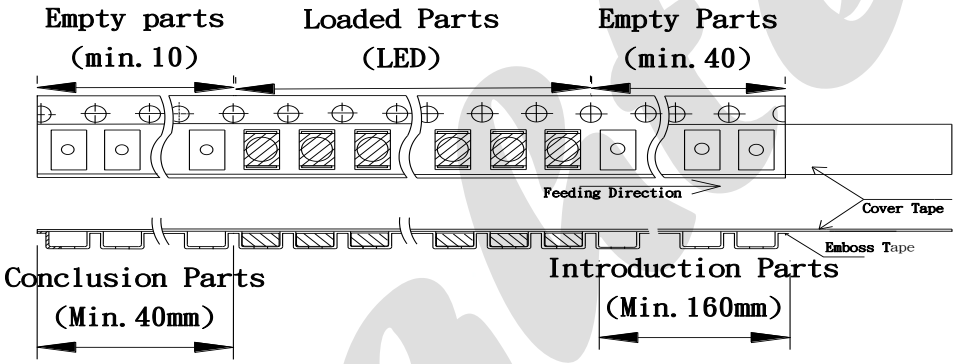
It shall be normal to see slight color fading of carrier (light yellow) after baking in process.

Tapping

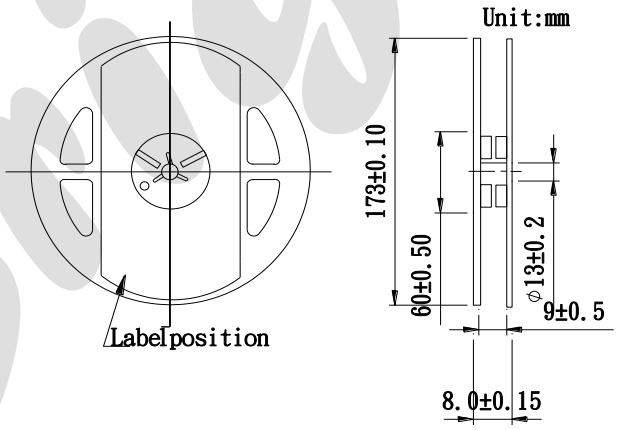
1. Dimensions of Tape (Unit: mm)



2. Arrangement of Tape



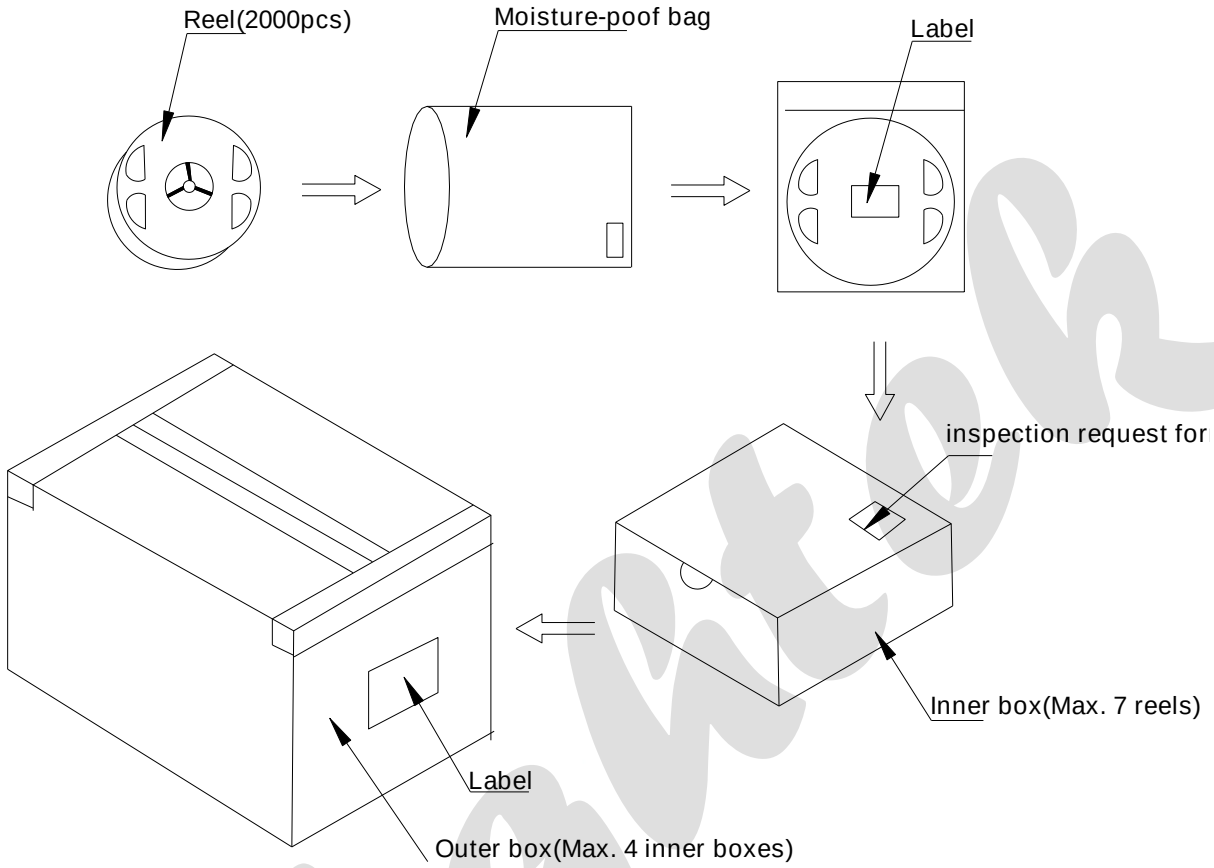
3. Dimensions of Reel (Unit: mm)



Notes:

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

Packing



Reeled product (max.2,000) 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 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

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

- No pressure should be exerted to the epoxy shell of the SMD under high temperature.
- Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.
- 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.