

SPECIFICATION FOR APPROVAL

Customer : _____

Customer Part No: _____

SHINING Part No: SN-NE3015BAAA57KG-N

Emitted color: White

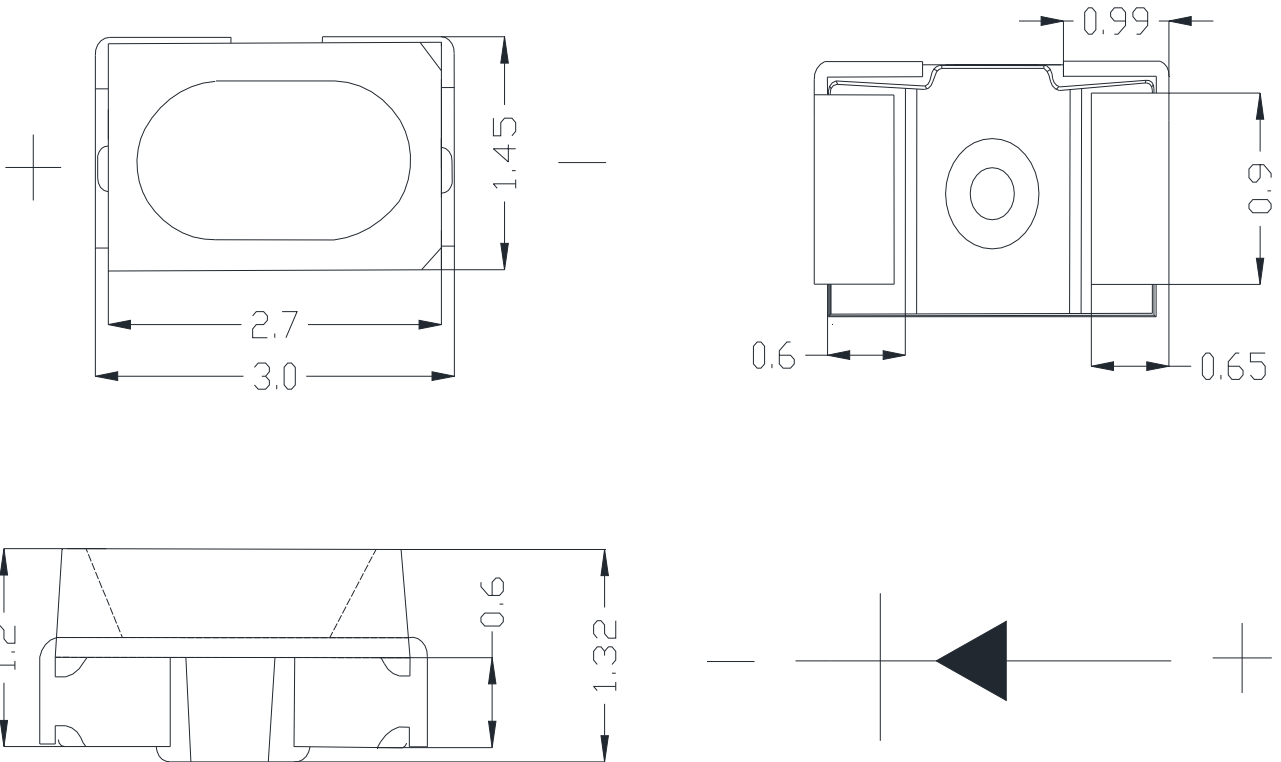
Revision History		
Date	Revision History	Prepared
2022.7.18	New Version	A/0


Confirmed By Customer	Approval by	Prepared by
	Liusan	Shaochengcheng

Feature

- △ Viewing angle:120 deg
- △ The materials of the LED dice is InGaN
- △ 3.0mm×1.45mm×1.32mm
- △ Pb-free
- △ RoHS compliant lead-free soldering compatible
- △ AEC-Q102 Qualified
- △ Precondition: Bases on JEDEC J-STD 020D Level 3

Package Outline





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

NOTES:

1. All dimensions are in millimeters ;
2. Tolerances are ±0.2mm unless otherwise noted.

Absolute maximum ratings at Ta=25°C

Parameter	Symbol	Value	Unit
Forward current	I _f	30	mA
Reverse voltage	V _r	5	V
Operating temperature range	T _{op}	-40~+105	°C
Storage temperature range	T _{stg}	-40~+105	°C
Pulse Forward Current (Pulse Width ≤ 1 msec. and Duty ≤ 1/10)	I _{fp}	35	mA
Electrostatic Discharge	ESD	2000	V

Electro-optical characteristics at Ta=25°C

Parameter	Test Condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	I _f =20mA	V _f	2.6	--	3.2	V
Luminous intensity	I _f =20mA	Φ	6	--	12	Lm
Color temperature	I _f =20mA	CCT	--	5700	--	K
Viewing angle at 50% I _v	I _f =20mA	2θ 1/2	--	120	--	Deg
Reverse current	V _r =5V	I _r	--	--	10	μA

NOTE: (Tolerance: Φ±10%, V_f±0.1V, X/Y ±0.01)

Forward voltage range

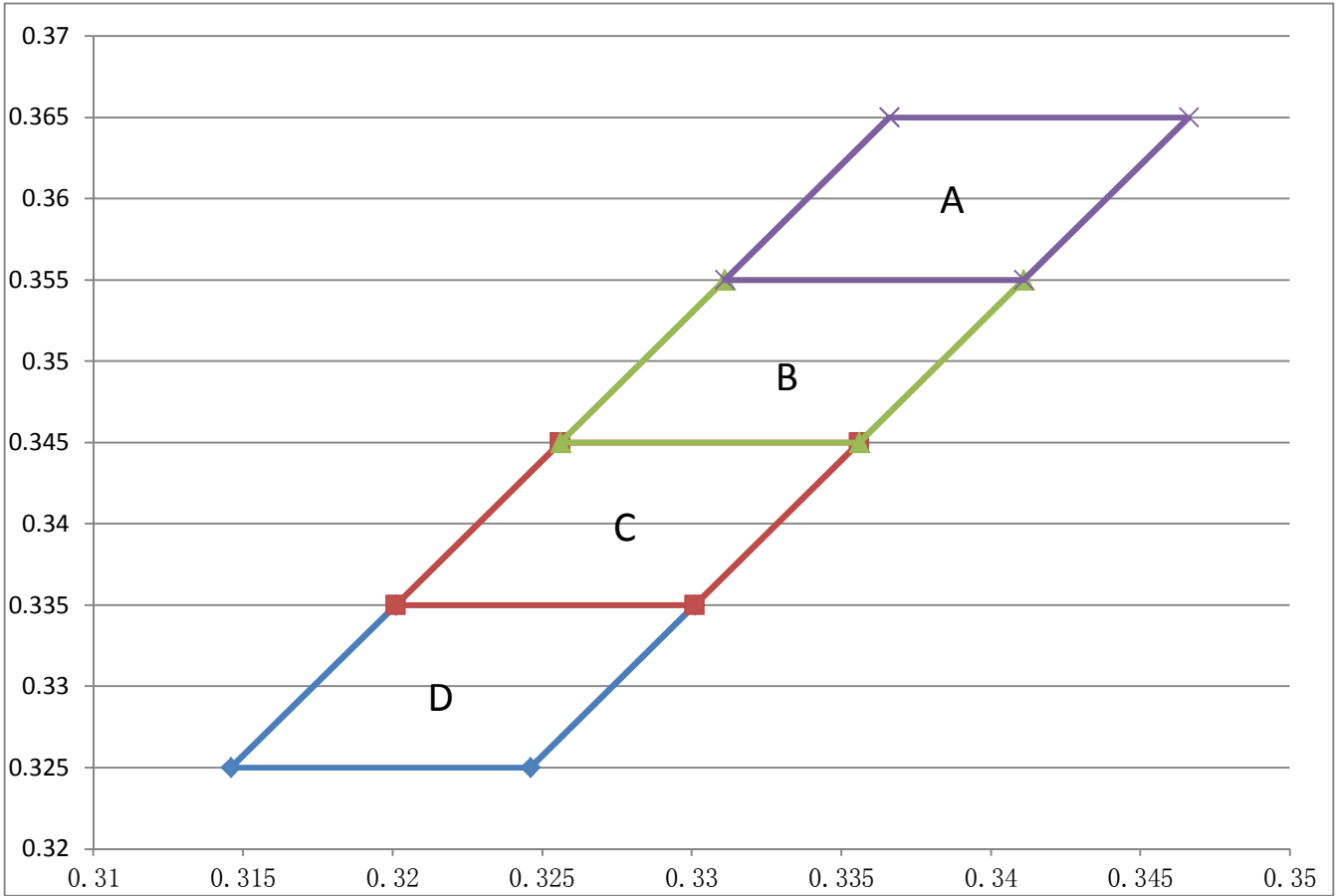
Forward Voltage Unit: V@20mA		
Bin Code	MIN	MAX
F04	2.6	2.8
F05	2.8	3.0
F06	3.0	3.2

Luminous intensity range

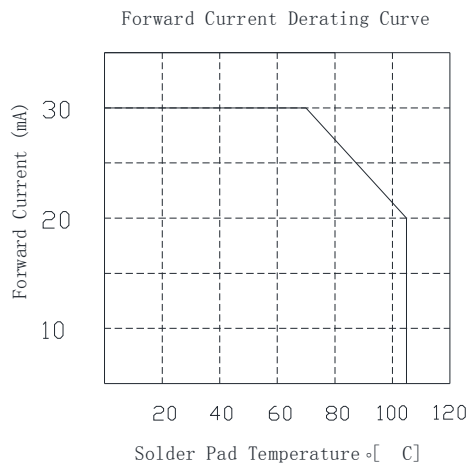
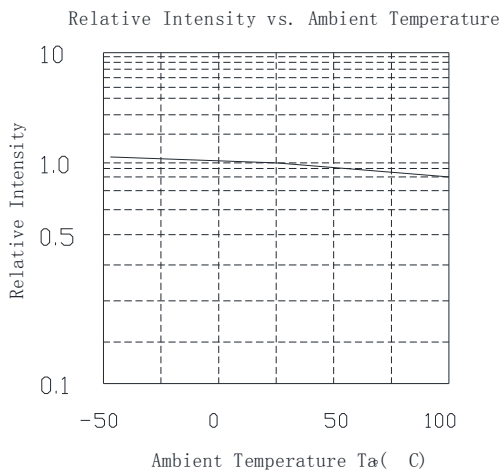
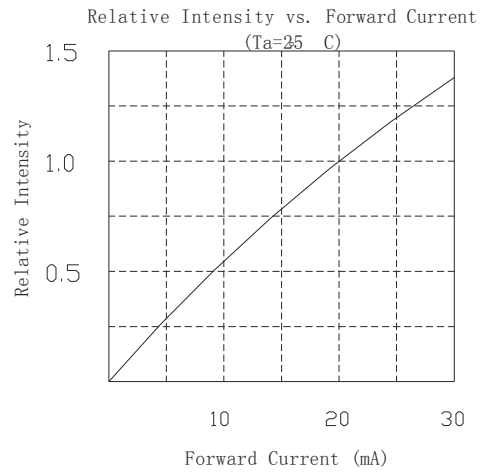
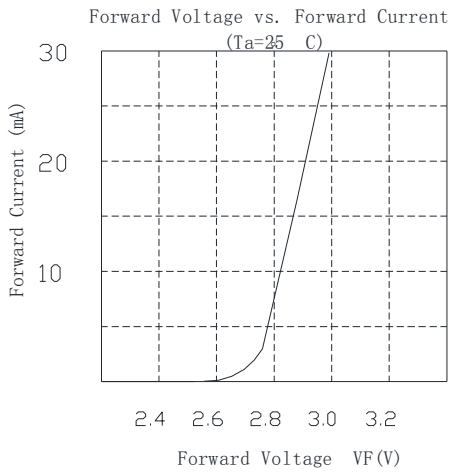
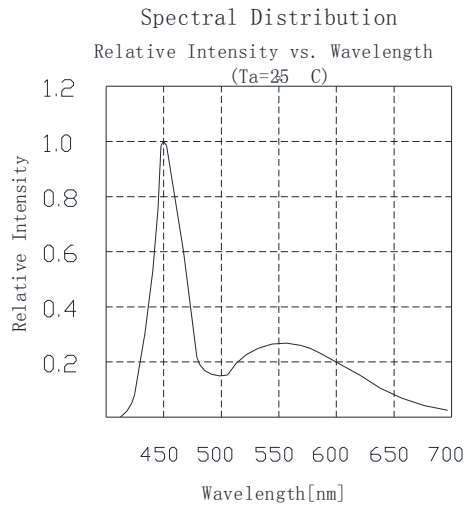
Luminous Intensity Unit: Im@20mA		
Bin Code	MIN	MAX
C04	6	7
C05	7	8
C06	8	9
C07	9	10
C08	10	11
C09	11	12

Chromaticity range

Bin	X	Y	Bin	X	Y
A	0.3366	0.365	B	0.3311	0.355
	0.3311	0.355		0.3256	0.345
	0.3411	0.355		0.3356	0.345
	0.3466	0.365		0.3411	0.355
C	0.3256	0.345	D	0.3201	0.335
	0.3201	0.335		0.3146	0.325
	0.3301	0.335		0.3246	0.325
	0.3356	0.345		0.3301	0.335



Typical optical characteristics curves



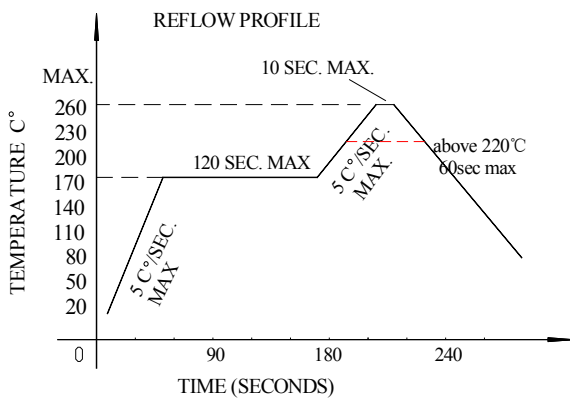
Reflow profile

- Soldering condition
 - Recommended soldering conditions

Reflow Soldering		Hand Soldering	
Pre-heat	160~180℃	Temperature	300℃ Max.
Pre-heat time	120 seconds Max.	Soldering time	3 second Max. (one time only)
Peak temperature	260℃ Max.		
Soldering time	10 seconds Max.		
Condition	Refer to Temperature-profile		

- After reflow soldering rapid cooling should be avoided

- Temperature-profile (Surface of circuit board)
Use the following conditions shown in the figure.



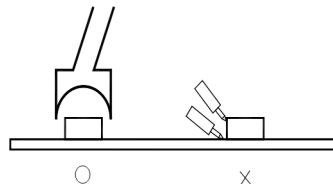
1. Reflow soldering should not be done more than two times
2. When soldering ,do not put stress on the LEDs during heating

■ Soldering iron

1. When hand soldering, keep the temperature of the iron under 300℃, and at that temperature keep the time under 3 sec.
2. The hand soldering should be done only a time
3. The basic spec is ≤5 sec. when the temperature of 260℃, do not contact the resin when hand soldering

■ Rework

1. Customer must finish rework within 5 sec und
2. The head of iron can not touch the resin
3. Twin-head type is preferred.



■ CAUTIONS

The encapsulated material of the LEDs is silicone . Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking up nozzle, the pressure on the silicone resin should be proper.

Reliability

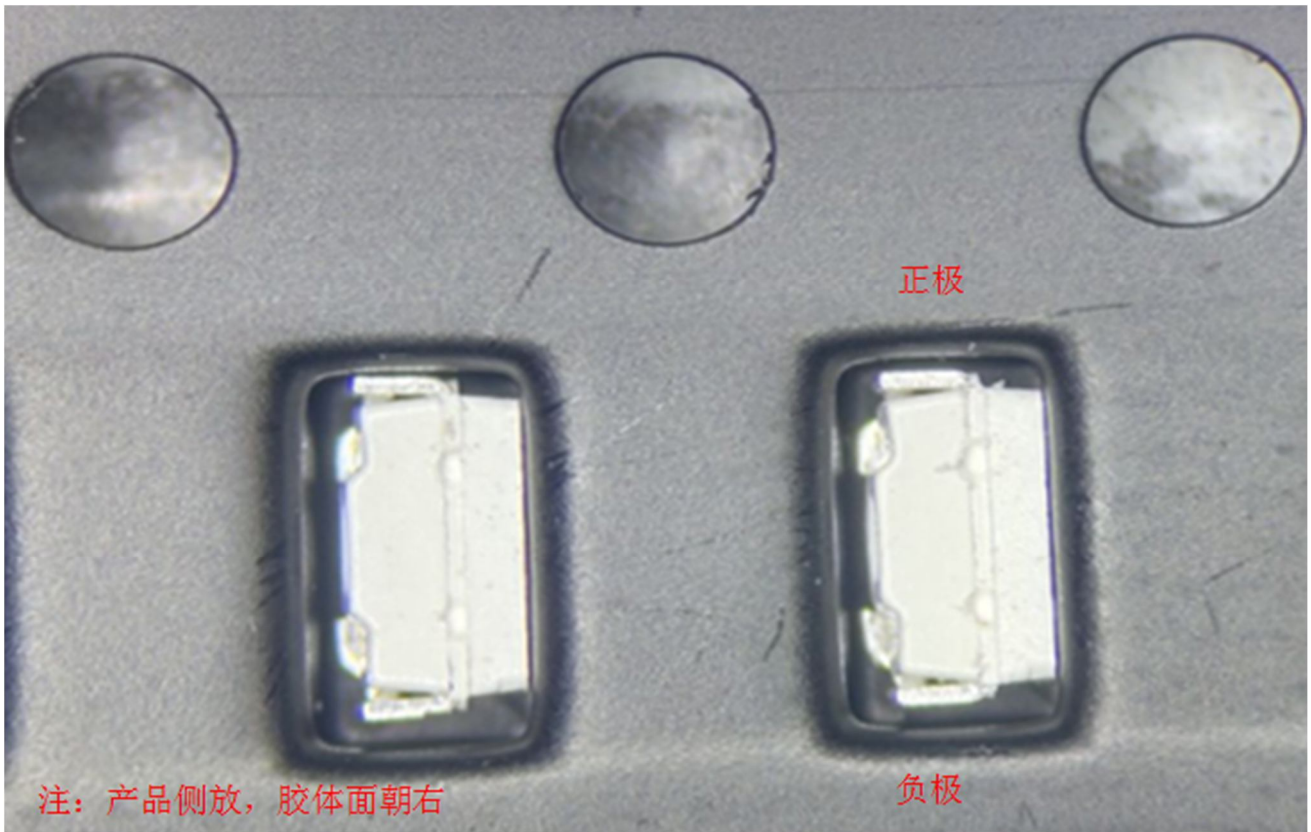
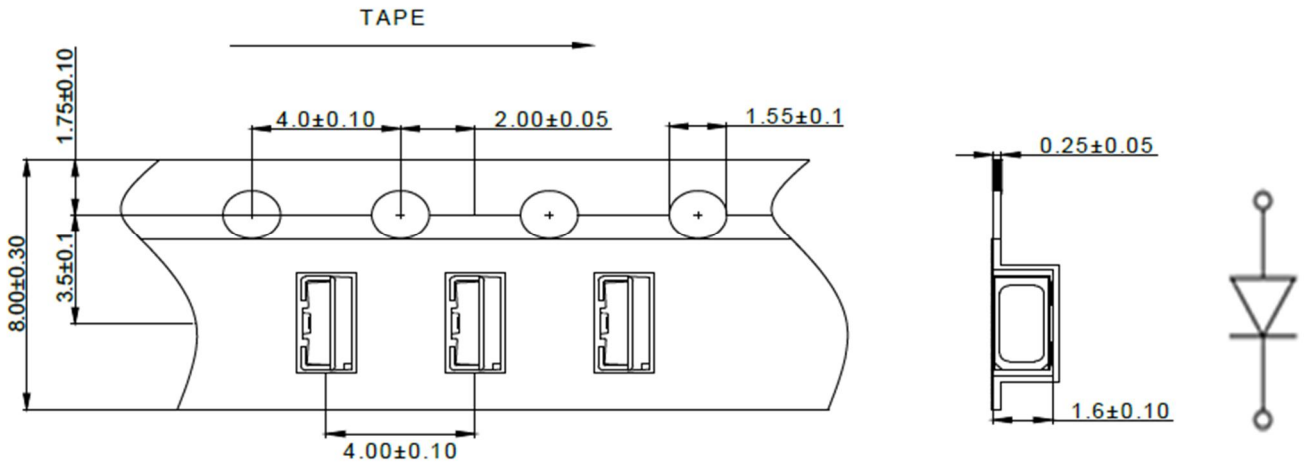
(1)TEST ITEMS AND RESULTS

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Resistance to Soldering Heat(Reflow Soldering)	Tsld=260°C,10sec	2 times	0/22
	Temperature Cycle	-40°C 30min ↑↓5min 100°C 30min	100 cycle	0/22
	High Temperature Storage	Ta=100°C	1000 hrs	0/22
	Low Temperature Storage	Ta=-40°C	1000 hrs	0/22
Operation Sequence	Life Test	Ta=25°C IF=20mA	1000 hrs	0/11
	High Humidity Heat Life Test	60°C RH=85% IF=20mA	1000 hrs	0/11

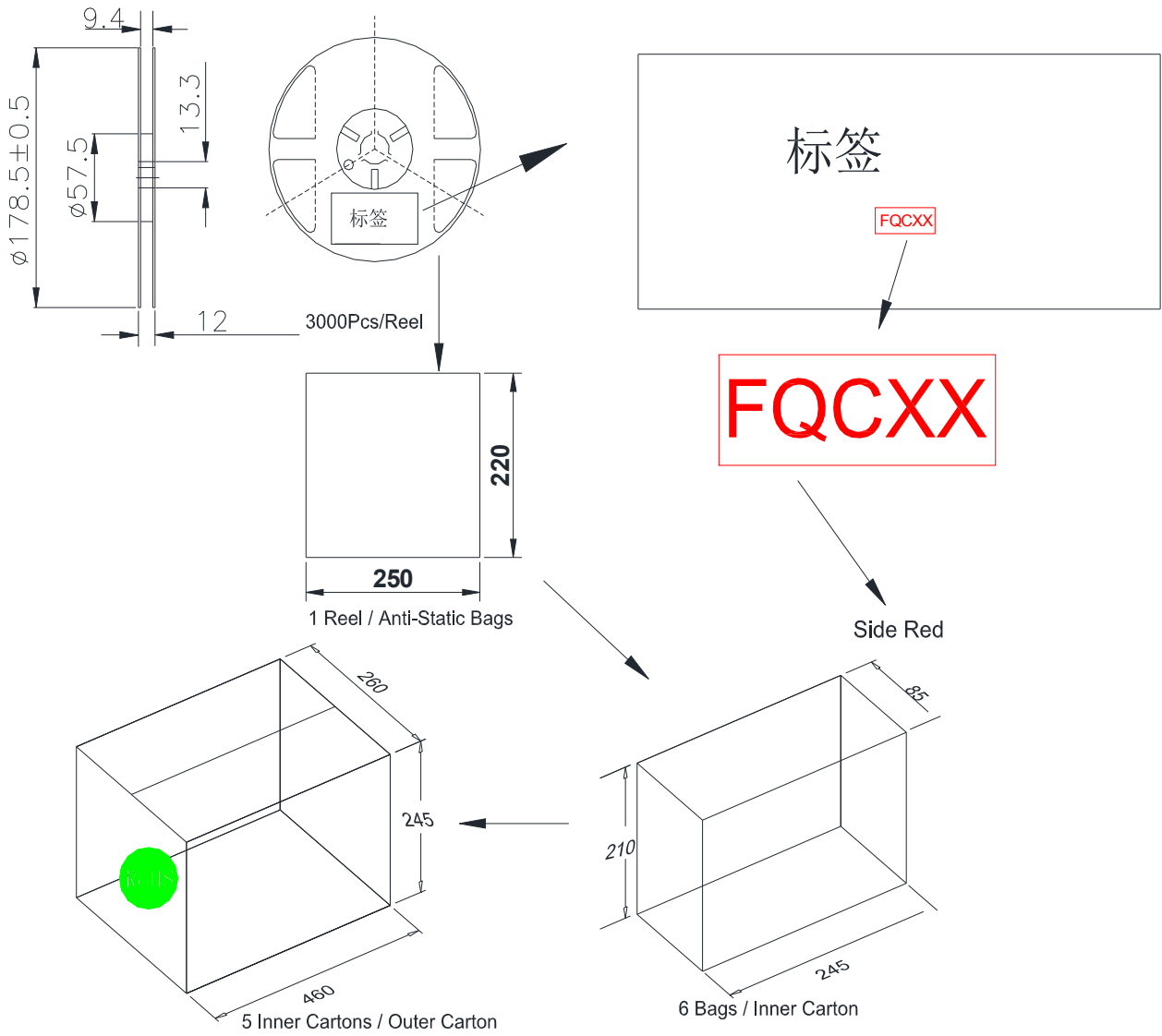
(2)CRITERIA FOR JUDGING THE DAMAGE

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	VF	IF=20mA	-	Initial Data×1.2
Luminous Intensity	IV	IF=20mA	Initial Data×0.7	-

Packaging Specifications



Packaging specifications



CAUTIONS

Storage conditions

Before opening the package:

The LEDs should be kept at 30°C or less and 70%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

After opening the package:

The LEDs should be kept at 30°C or less and 50%RH or less. The LEDs should be soldered within 24 hours (1days) after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.

This specification shining has the right of final interpretation