BEELED

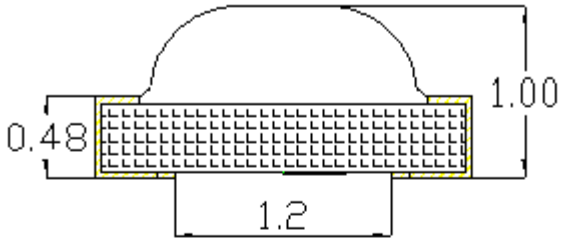
СВЕТОДИОДЫ BEELED - ТЕХНИЧЕСКОЕ ОПИСАНИЕ

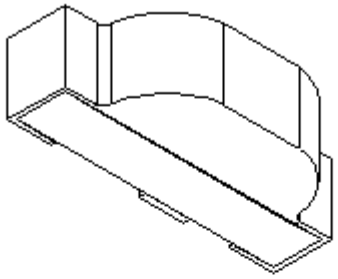
MODEL: 2106UWC

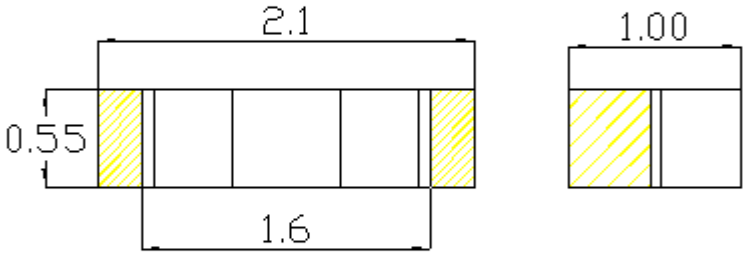
一、Product Description：

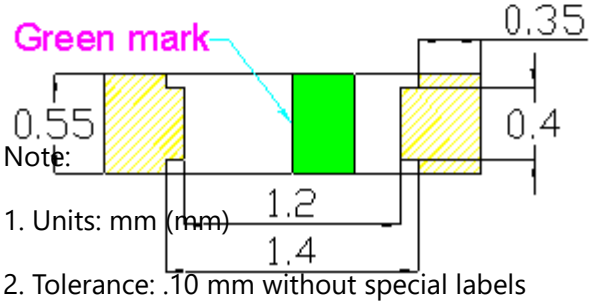
1. L/W/H: 2.1 x 0.6 x 1.0 mm
2. Color: High brightness white
3. Colloid: Yellow colloid
4. EIA Standard Packaging
5. Eco-friendly products, ROHS compliant
6. For automatic pitchers
   For reflow welding processes

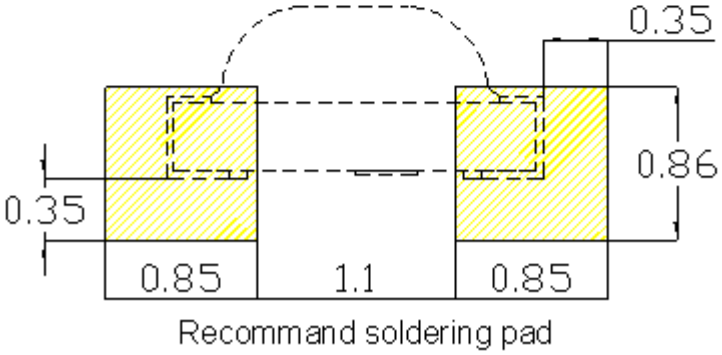
二、Form factor and recommended pad size:







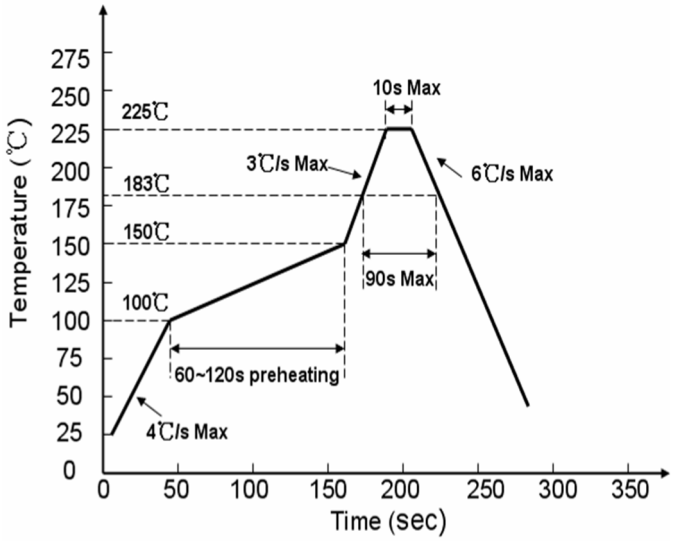




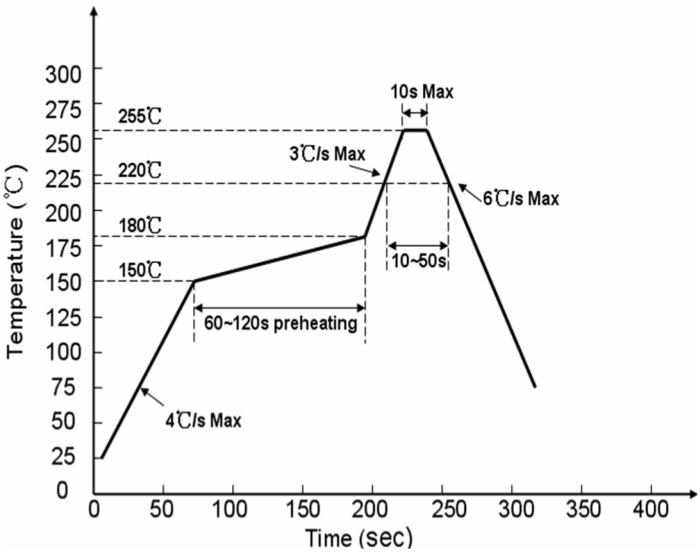
Note:

1. Units: mm (mm)
2. Tolerance: .10 mm without special labels

三、The recommended welding temperature curve:



有铅制程



无铅制程

四、 Maximum absolute rating（Ta=25℃）：

Number of parameters	符 号	最大额定值	单 位
消耗功率	Pd	80	mW
Maximum pulse current (1/10 duty ratio, 0.1ms pulse width)	I_{FP}	100	mA
Forward DC operating current	I_F	25	mA
Reverse voltage	V_R	5	**V**
Working environment temperature	Topr	-30°C ~ +85°C	
Storage ambient temperature	Tstg	-40°C ~ +90°C	
Welding conditions	Tsol	Reflow welding : 260°C , 10s Manual welding : 300°C ,3s	

五、Photoelectric parameters （Ta=25℃）：

Parameters	Symbol	Min.	Typical	Max.	Unit	Test conditions
Luminous intensity	IV	---	200	---	mcd	IF=5mA
viewing angle	2θ1/2	---	120	---	deg	IF=5mA
Forward voltage	VF	2.6	---	3.2	V	IF=5mA
Reverse current	IR	---	---	5	uA	VR=5V

Brightness split:

Code	Min.	Max.	Unit	Test conditions
J1	105	140	mcd	IF=5mA
J2	140	185		
K1	185	250		
K2	250	330		

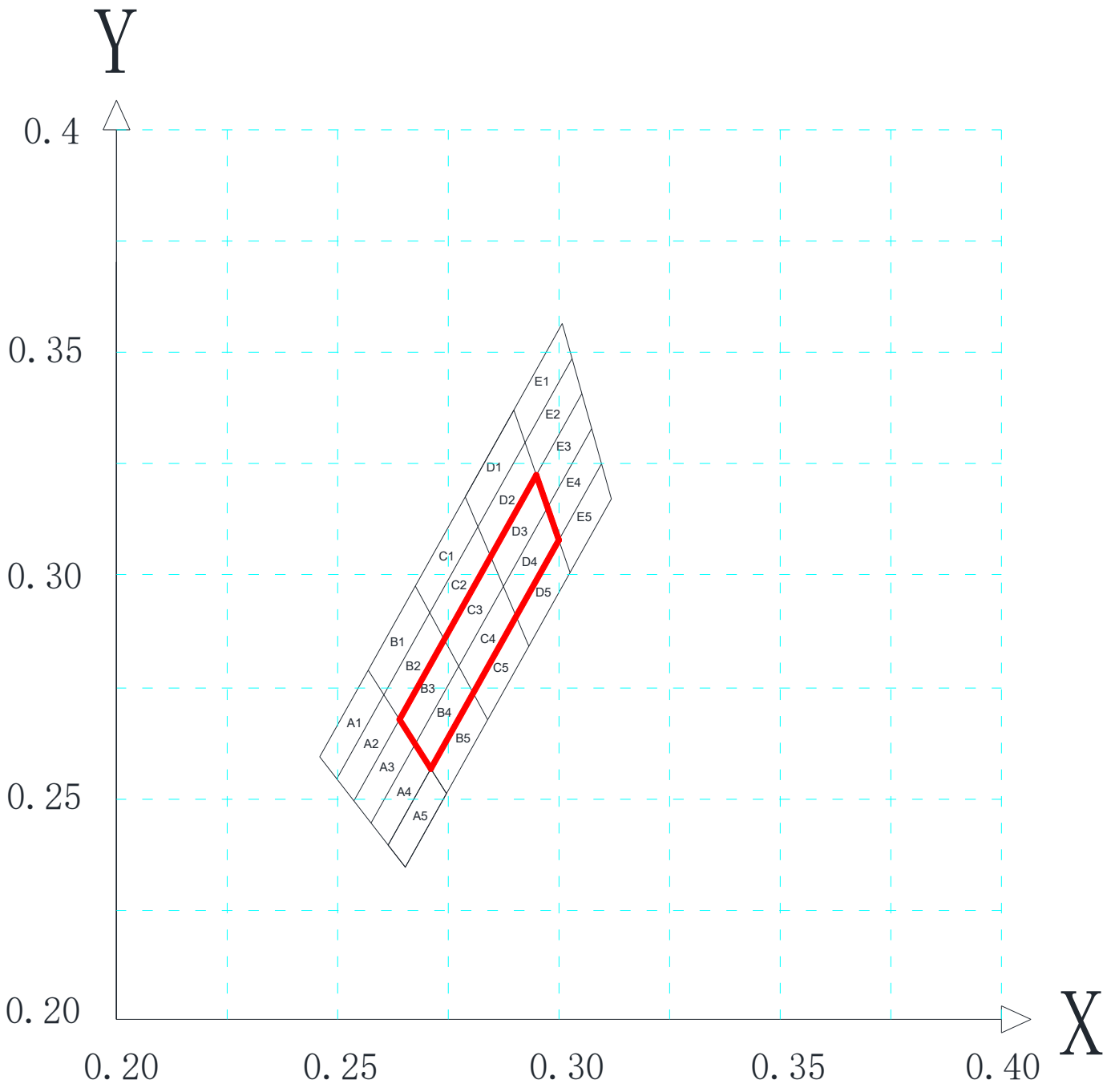
备注:Luminous intensity ± 11%

电压分档:

Code	Min.	Max.	Unit	Test conditions
7A	2.6	2.7	V	IF=5mA
7B	2.7	2.8		
8A	2.8	2.9		
8B	2.9	3.0		
9A	3.0	3.1		

备注:Forward voltage deviation ± 0.02V

Main color area：



Note： Red part of the main color area

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Bin Code	CIE-X	CIE-Y	Bin Code	CIE-X	CIE-Y	Bin Code	CIE-X	CIE-Y
A1	0.2459	0.259	B1	0.2569	0.2785	C1	0.2675	0.2974
	0.2569	0.2785		0.2675	0.2974		0.2788	0.3175
	0.2604	0.273		0.2708	0.2914		0.2817	0.3108
	0.2498	0.2541		0.2604	0.273		0.2708	0.2914
	0.2459	0.259		0.2569	0.2785		0.2675	0.2974
A2	0.2498	0.2541	B2	0.2604	0.273	C2	0.2708	0.2914
	0.2604	0.273		0.2708	0.2914		0.2817	0.3108
	0.264	0.2674		0.2741	0.2854		0.2846	0.3041
	0.2537	0.2491		0.264	0.2674		0.2741	0.2854
	0.2498	0.2541		0.2604	0.273		0.2708	0.2914
A3	0.2537	0.2491	B3	0.264	0.2674	C3	0.2741	0.2854
	0.264	0.2674		0.2741	0.2854		0.2846	0.3041
	0.2675	0.2619		0.2773	0.2794		0.2874	0.2973
	0.2575	0.2441		0.2675	0.2619		0.2773	0.2794
	0.2537	0.2491		0.264	0.2674		0.2741	0.2854
A4	0.2575	0.2441	B4	0.2675	0.2619	C4	0.2773	0.2794
	0.2675	0.2619		0.2773	0.2794		0.2874	0.2973
	0.271	0.2563		0.2806	0.2734		0.2903	0.2906
	0.2614	0.2392		0.271	0.2563		0.2806	0.2734
	0.2575	0.2441		0.2675	0.2619		0.2773	0.2794
A5	0.2614	0.2392	B5	0.271	0.2563	C5	0.2806	0.2734
	0.271	0.2563		0.2806	0.2734		0.2903	0.2906
	0.2746	0.2508		0.2839	0.2673		0.2932	0.2839
	0.2653	0.2342		0.2746	0.2508		0.2839	0.2673
	0.2614	0.2392		0.271	0.2563		0.2806	0.2734

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Bin Code	CIE-X	CIE-Y	Bin Code	CIE-X	CIE-Y
D1	0.2788	0.3175	E1	0.2898	0.337
	0.2898	0.337		0.3007	0.3565
	0.2923	0.3297		0.303	0.3486
	0.2817	0.3108		0.2923	0.3297
	0.2788	0.3175		0.2898	0.337
D2	0.2817	0.3108	E2	0.2923	0.3297
	0.2923	0.3297		0.303	0.3486
	0.2949	0.3224		0.3052	0.3407
	0.2846	0.3041		0.2949	0.3224
	0.2817	0.3108		0.2923	0.3297
D3	0.2846	0.3041	E3	0.2949	0.3224
	0.2949	0.3224		0.3052	0.3407
	0.2974	0.3151		0.3074	0.3328
	0.2874	0.2973		0.2974	0.3151
	0.2846	0.3041		0.2949	0.3224
D4	0.2874	0.2973	E4	0.2974	0.3151
	0.2974	0.3151		0.3074	0.3328
	0.3	0.3078		0.3096	0.3249
	0.2903	0.2906		0.3	0.3078
	0.2874	0.2973		0.2974	0.3151
D5	0.2903	0.2906	E5	0.3	0.3078
	0.3	0.3078		0.3096	0.3249
	0.3025	0.3005		0.3118	0.317
	0.2932	0.2839		0.3025	0.3005
	0.2903	0.2906		0.3	0.3078

六、 Photonic parameters represent value characteristic curves：

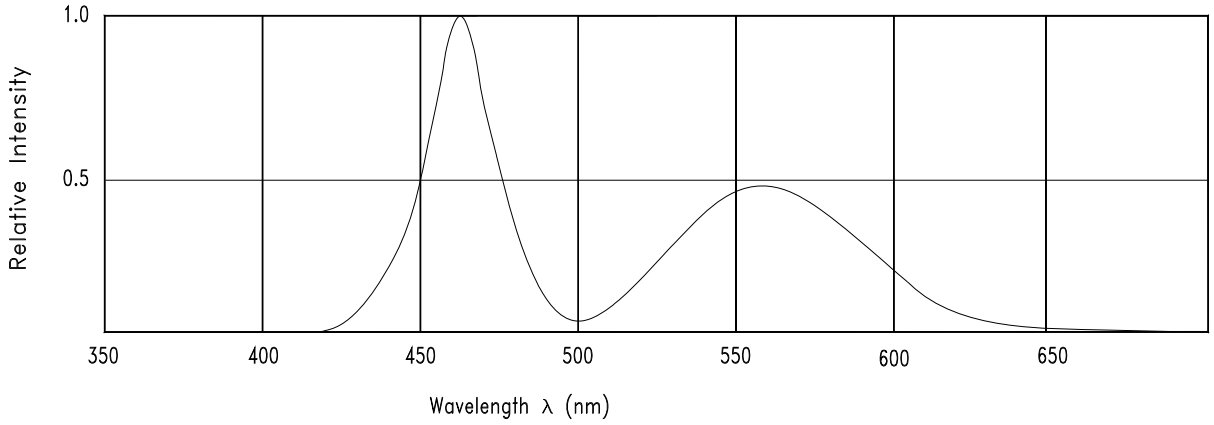


Fig.1 Relative Intensity vs. Wavelength

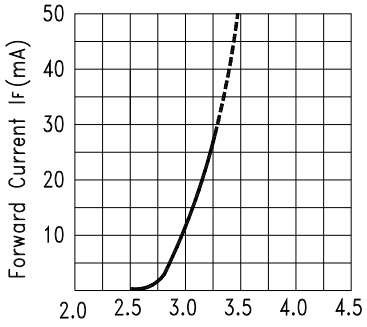


Fig.2 Forward Current vs. Forward Voltage

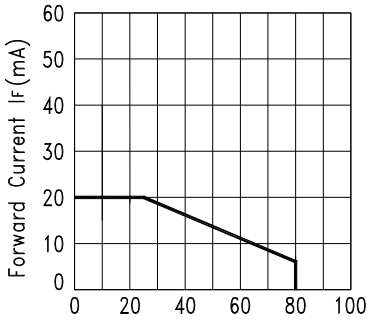


Fig.3 Forward Current Derating Curve

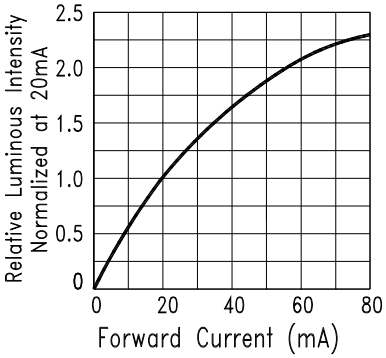


Fig.4 Relative Luminous Intensity vs. Forward Current

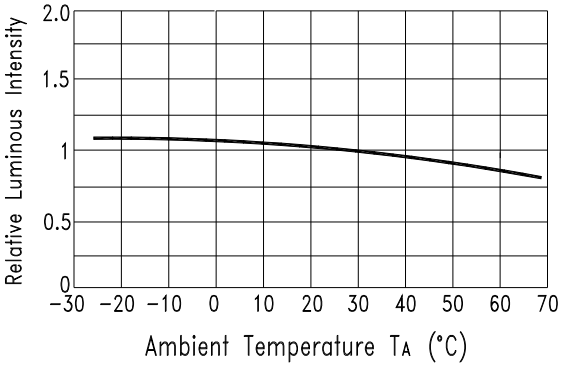


Fig.5 Luminous Intensity vs.Ambient Temperature

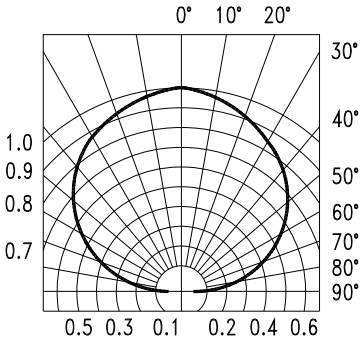


Fig.6 Spatial Distribution

Note: If not otherwise noted, the test ambient temperature is25 ± 3°C

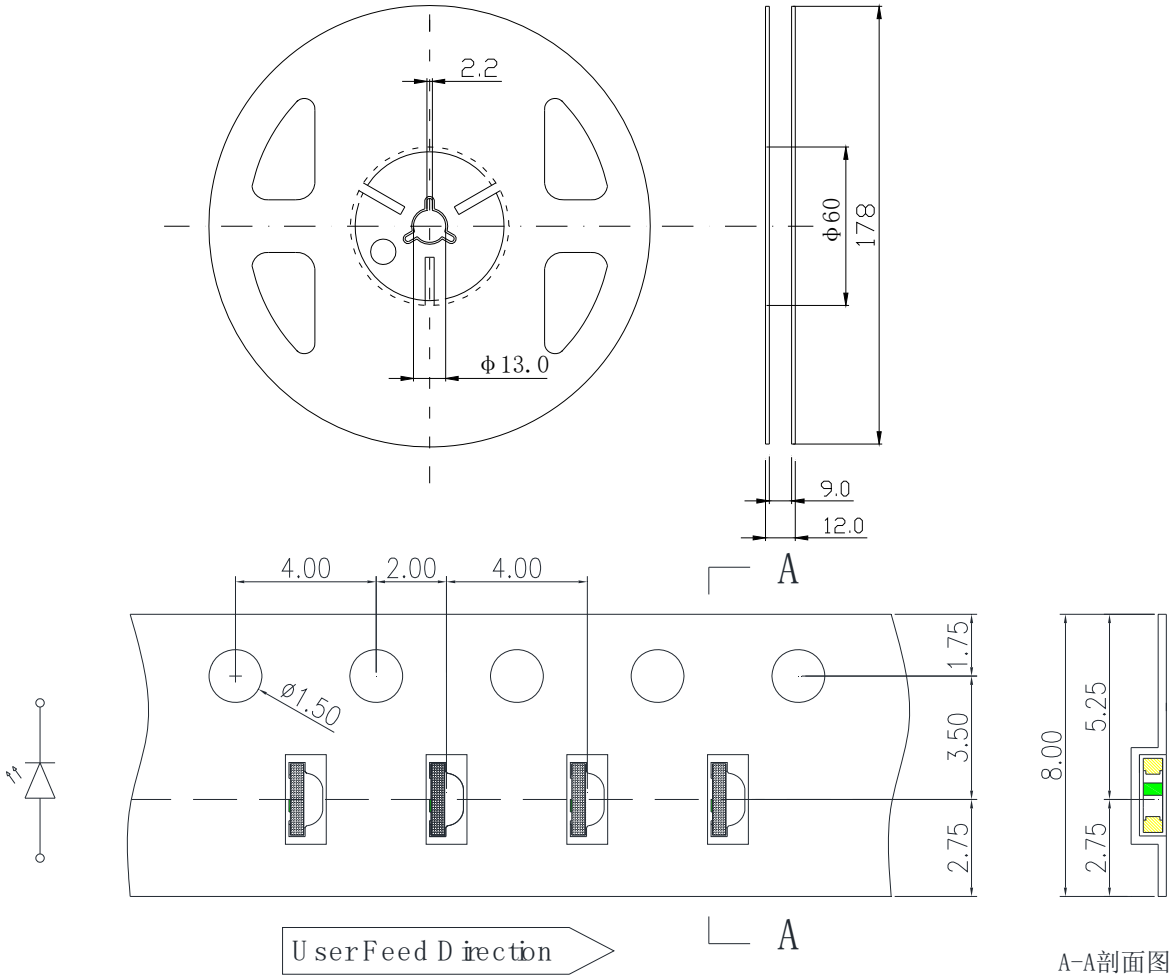
七、Label IDENTIFICATION：

CAT：Luminous intensity（mcd）
HUE： XY
REF： Voltage（V）

误差范围

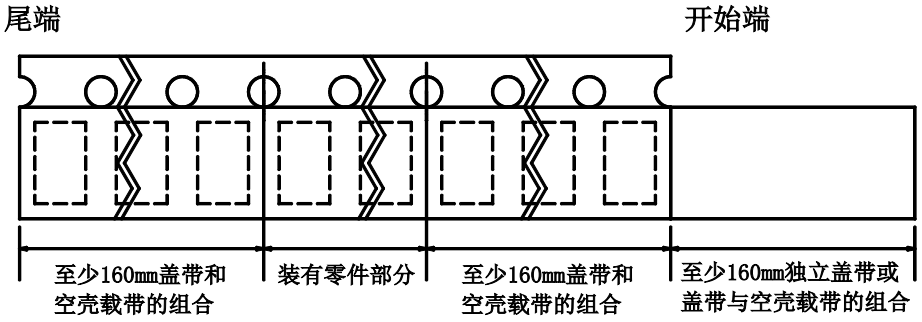
a. Luminous Intensity: ± 15%
b. Forward Voltage: ± 0.1V

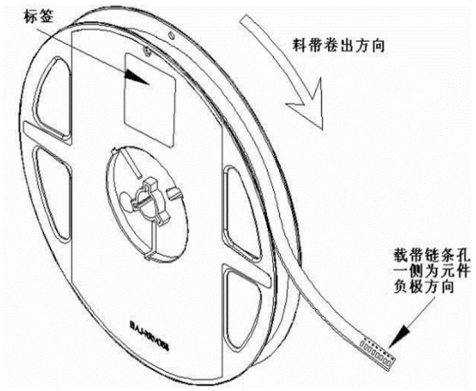
八、Packed carrier and disc size：



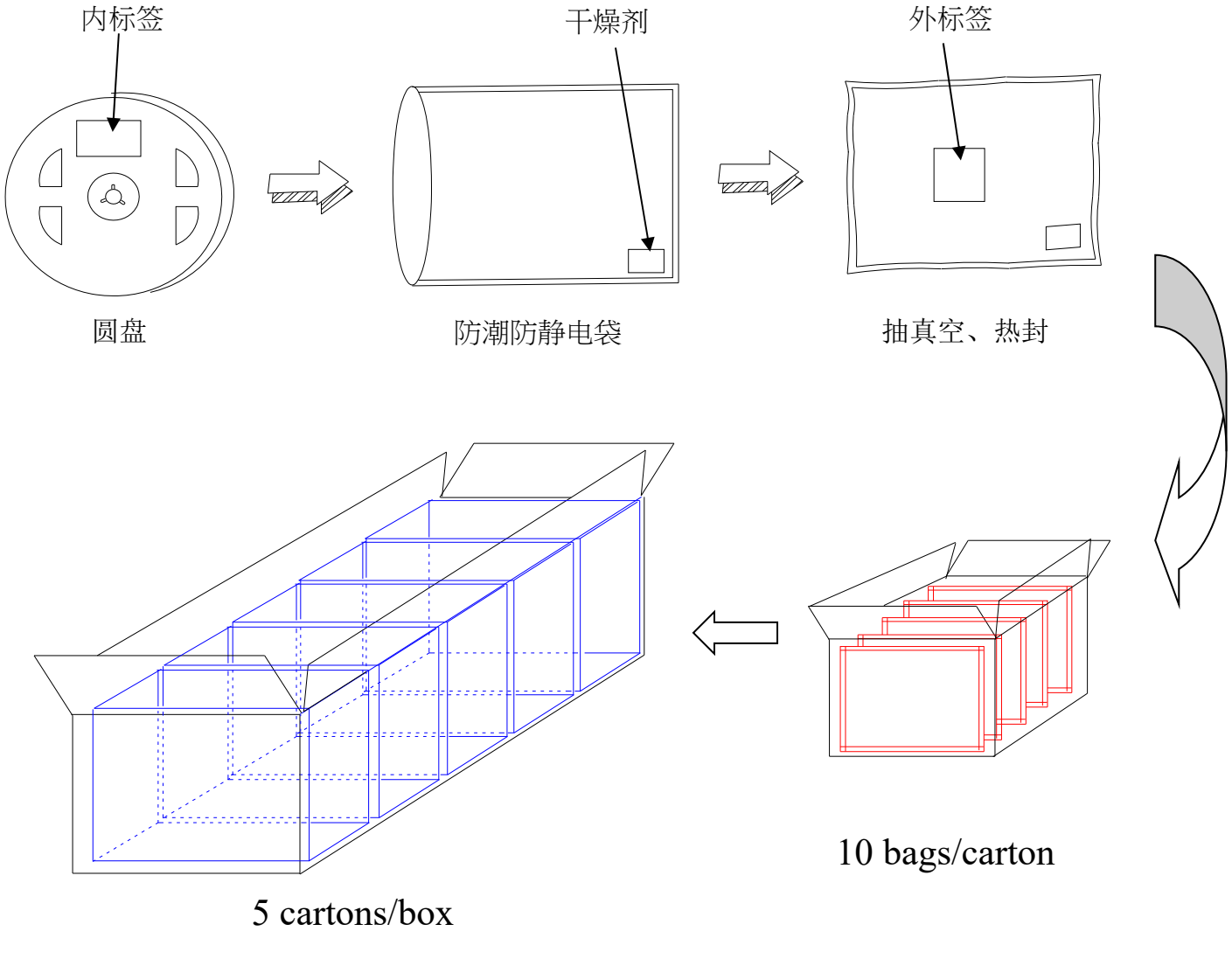
备注：1. Unit : mm
2. Tolerance: -0. 15 mm without a special label

九、 Disc and carrier roll out direction and cavity specifications：





十、Inner and outer packaging：



十一、Trust experiments：

Test contest	Test conditions	Number of tests	Reference standards	Failure determination criteria	Number of failed LEDs（PCS）
Moisture-proof rating	1. The maximum temperature of reflow welding is 260 degrees C, 10 seconds, reflow welds; 2. Storage conditions before reflow welding: 30 degrees C, relative humidity, 70%, 168H	-	JEITA ED-4701 300 301	# 1	0/22
Welding Trust (lead-free reflow welding)	Maximum temperature of reflow welding: 245s5degrees C,5 seconds (leadless reflow welding)	-	JEITA ED-4701 303 303A	# 2	0/22
Hot and cold cycle	-40℃ 30minutes~25℃ 5minutes~ 100℃ 30minutes~25℃ 5minutes	300Cycle	JESD22-A104	# 1	0/22
Hot and cold shock	-35℃ 15minutes Conversion time 3minutes 85℃ 15minutes	300 Cycle	JESD22-A106	# 1	0/22
High temperature storage	Ta=100℃	1000h	JESD22-A103	# 1	0/22
Low temperature storage	Ta=-40℃	1000h	JESD22-A119	# 1	0/22
Normal temperature aging	Ta=25℃ IF=20mA	1000h	JESD22-A108	# 1	0/22

（2）Failure standards

Standard #	Project	Test conditions	Failure standards
# 1	Forward voltage(V_F)	I_F=20mA	＞U.S.L*1.1
	Luminous intensity（IV）	I_F=20mA	＜L.S.L*0.7
	Reverse current(I_R)	V_R=5V	＞U.S.L*2.0
# 2	Welding reliability	/	The proportion of tin paste covering pad is less than95%

1. U.S.L : Maximum specifications L.S.L : Lower specification limit

十二、Precautions for use：

1.Use:

1. Too high temperatures affect the brightness of the LED and other performance, so in order for the LED to perform better, the LED should be

Stay away from heat sources.

2. Photoelectric parameter tolerance:

Forward voltage(REF / VF): + 0.02V

Brightness(CAT / IV)：+ 11%

Wavelength(HUE / WLD): + 1nm

2. Store:

1. Without opening the original packaging, the recommended storage environment is: temperature 5 to 30 degrees Humidity below 85% RH. When inventory is more than two months, dehumidification should be done before use, condition 60 Degrees Celsius /8 hours;

2. After opening the original packaging, it is recommended that the storage environment is: temperature 5 to30 Degrees Celsius, humidity below 60%;

3. LED is a humidity sensitive component, in order to avoid moisture absorption of components, it is

recommended to open the packaging, store it in an airtight container with desiccant, or stored in a nitrogen moisture cabinet;

4. After opening the package, the components should be used within 168 hours (7 days) and welded as soon as possible after the patching;

5. Dehumidification should be done if the desiccant fails or if the component is exposed to air for more than 168 hours (7days);

Baking conditions:60℃/24Hours.

◆ **ESD Static protection**

LED（Special use of InGaN structural wafers blue, emerald green, purple, white, pink LED）It is an electrostatically sensitive element, and an electrostatic or current overload can damage the LED structure. An electrostatic damage to the LED or an overload of current can cause performance anomalies such as excessive leakage current, low VF, or inability to light up. So beware of the following:

1. Wear anti-static wristbands or anti-static gloves when touching 接触 LEDs;

2. All machinery and equipment, tools, worktables, racks, etc., should be properly grounded (within the ground impedance value of 10s);

3. Storage or handling LEDs should use anti-static bags, anti-static boxes and anti-static swing boxes, the use of ordinary plastic products is strictly prohibited;

4. It is recommended that ion fans be used to inhibit the generation of static electricity during operation;

5. The electrostatic field voltage is less than 100Vwithin the ambient range of 1 foot away from the LED element.

1. Cleaning

It is recommended to use alcohol solution, such as isopropyl alcohol, to clean the LED, and it is strictly forbidden to use corrosive solution cleaning.

1. Welding

1. The number of reflow welding solders shall not exceed two times;
2. Manual welding is only recommended in cases of repair and heavy work, with a
3. maximum welding temperature of no more than 300 degrees and must be completed within 3 seconds.
4. The maximum power of the iron should not exceed 30W;
5. Welding process, it is strictly forbidden to touch colloids at high temperatures;
6. After welding, it is prohibited to apply external force to the colloid, to bend the PCB, and to avoid impact on the components;
7. Reflow welding conditions refer to the first page temperature curve.

Other

The LED definitions described in this specification are applied in a range of common electronic devices (e.g. office equipment, communications equipment, etc.). If there are more stringent reliance requirements, especially in the event of a component failure or failure may directly endanger life and health (e.g. aerospace, transportation, transportation, medical equipment, safety protection, etc.), please inform the Business Personnel of the Division in advance;

High-brightness LED products may cause harm to the human eye when lit, and should avoid looking directly from above;

For continuous improvement purposes, product appearance and parameter specifications may be subject to improved changes without prior notice.