



深圳匡通电子有限公司
SHENZHEN KENTO ELECTRONICCO.,LTD

SPECIFICATION FOR APPROVAL

Product Name : 1206-0.8 White Light SMD LED

Product Type : KT-1206-W

Customer Name : _____

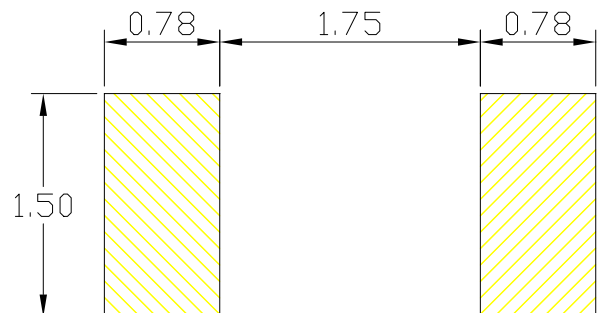
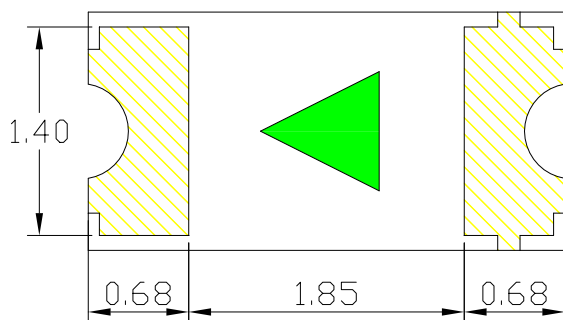
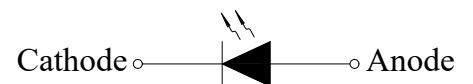
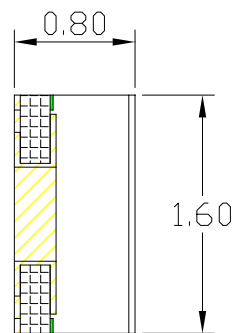
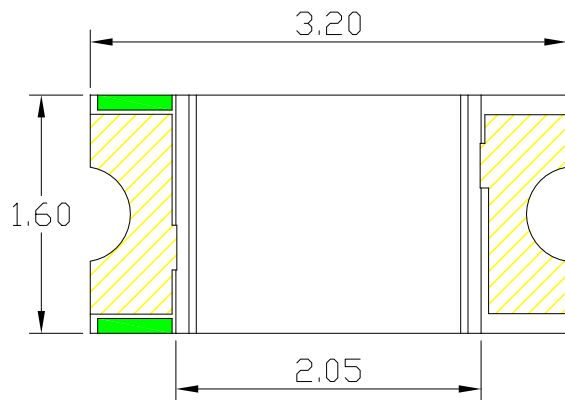
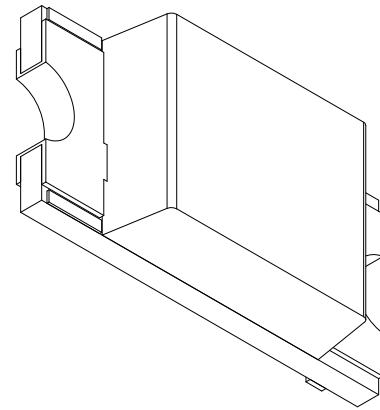
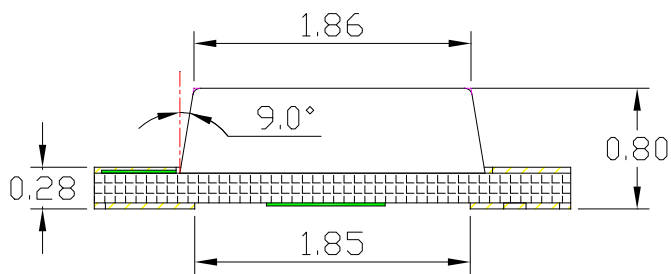
Customer NO. : _____

Date Prepared : _____

Customer recognition column		
confirm	Review	Approved

一、 Product Description :

- Appearance size (L/W/H): 3.2 x 1.6 x 0.8 mm
- Color: high brightness white
- Colloid: yellow colloid
- EIA standard packaging
- Environmentally friendly products, in line with ROHS requirements
- Suitable for automatic placement machines
- Suitable for reflow soldering process

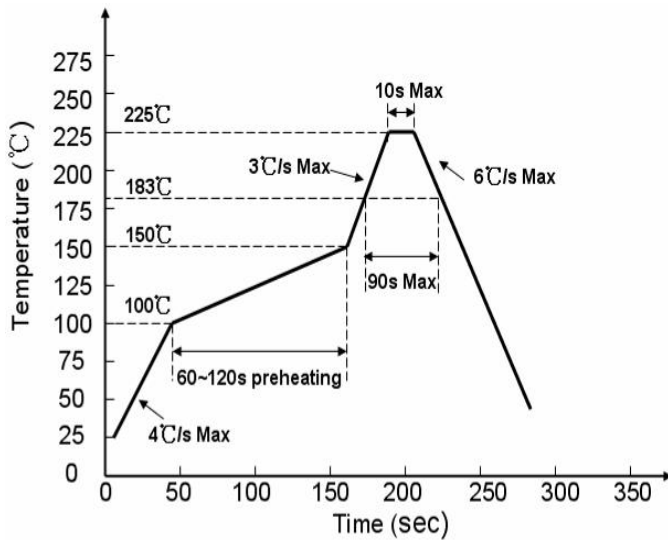
二、 Dimensions and Recommended Pad Size:


建议焊盘尺寸

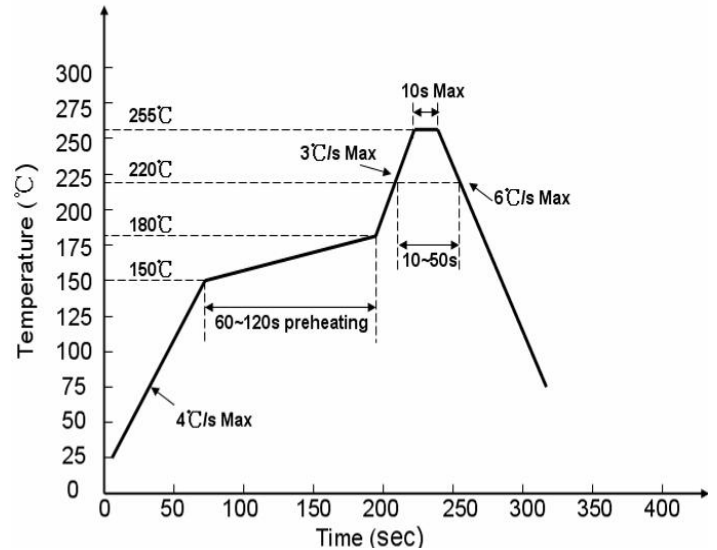
Remarks: 1. Unit: millimeter (mm)

 2. Tolerance: ± 0.10 mm unless otherwise noted

三、 Recommended welding temperature curve :



有铅制程



无铅制程

四、 Maximum absolute rating ($T_a=25^\circ\text{C}$):

Parameter	Symbol	MAX	Unit
Power consumption	P_d	80	mW
Maximum pulse current (1/10 duty cycle, 0.1ms pulse width)	I_{FP}	100	mA
Forward DC working current	I_F	25	mA
Reverse voltage	V_R	5	V
Working temperature	T_{opr}	$-30^\circ\text{C} \sim +85^\circ\text{C}$	
Storage temperature	T_{stg}	$-40^\circ\text{C} \sim +90^\circ\text{C}$	
Welding conditions	T_{sol}	Reflow soldering: 260°C , 10s Manual welding: 300°C , 3s	



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五、Photoelectric parameters (Ta=25°C):

Parameter	Symbol	MIX	Representative	MAX	Unit	Text
Light intensity	IV	---	300	---	mcd	IF=5mA
Semi-intensity viewing angle	2θ1/2	---	120	---	deg	IF=5mA
Forward Voltage	VF	2.6	---	3.2	V	IF=5mA
Reverse current	IR	---	---	1	uA	VR=5V

Brightness classification:

Code	MIX	MAX	UNIT	Text
B5	150	200	mcd	IF=5mA
B6	200	250		
C5	250	300		
C6	300	30		

Remarks: Light intensity error ± 11%

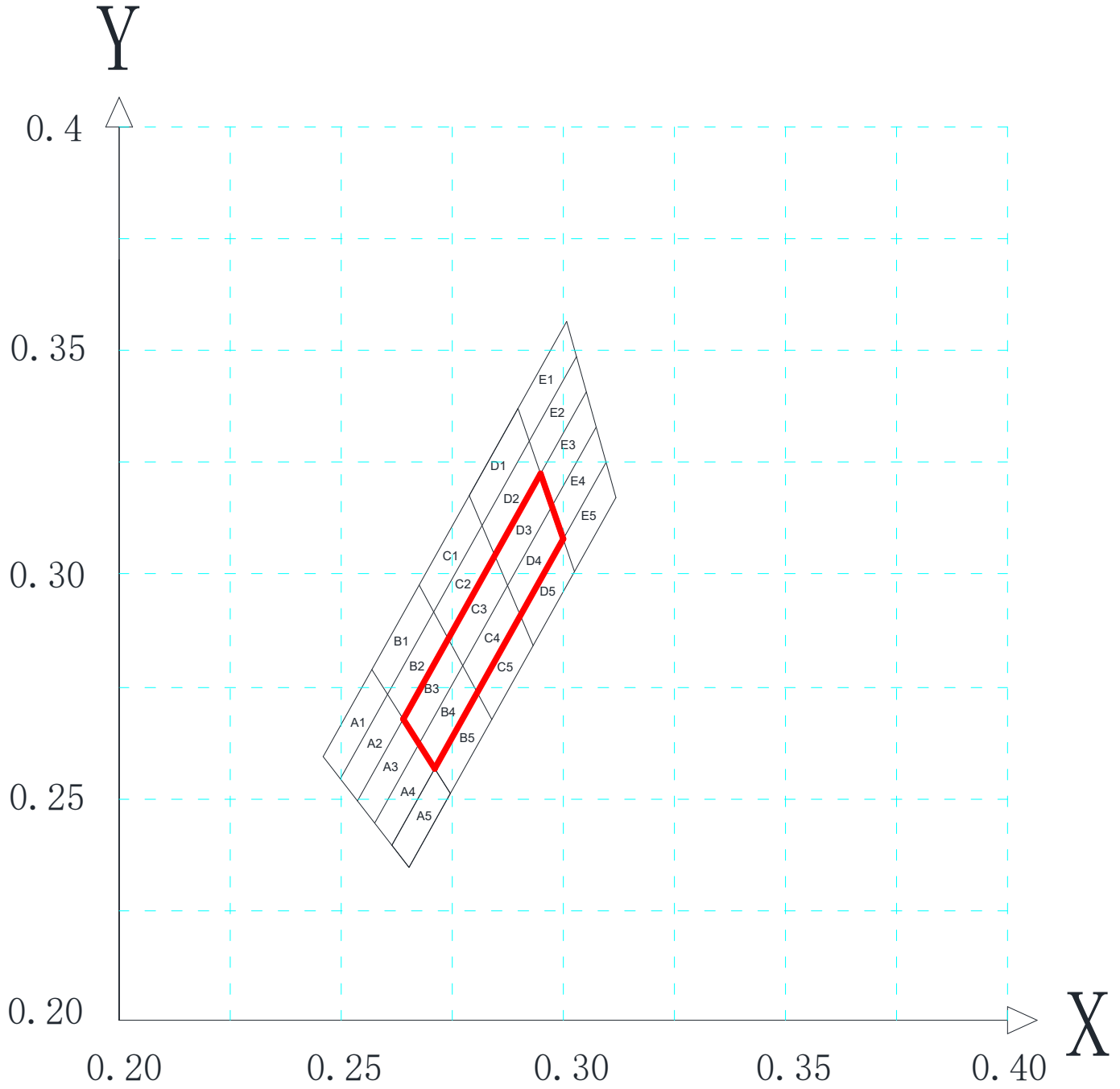
Voltage classification:

Code	MIX	MAX	UNIT	Text
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		
9B	3.1	3.2		

Remarks: Forward voltage error ± 0.02V

Main color production area:

Color zone:



Remarks: The red part is 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、 Characteristic curve of photoelectric parameter representative value:

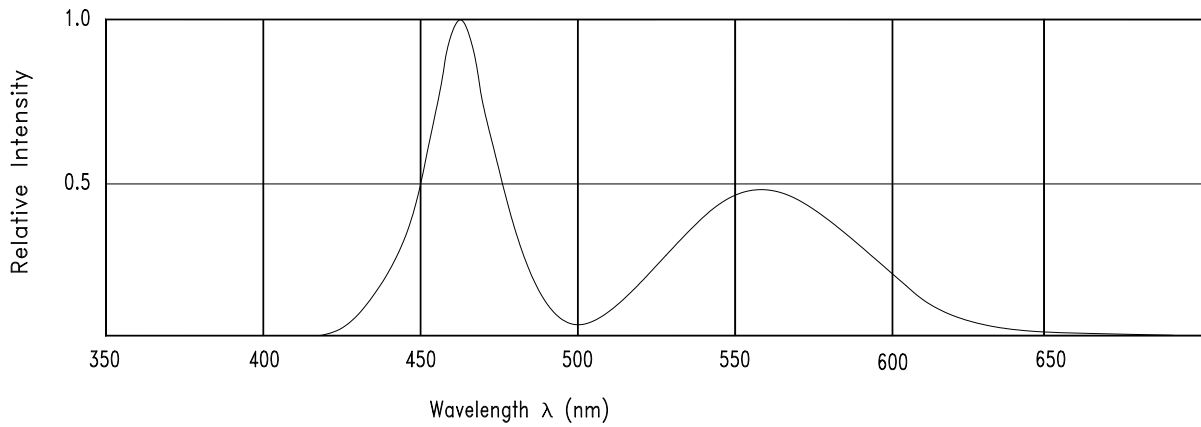


Fig.1 Relative Intensity vs. Wavelength

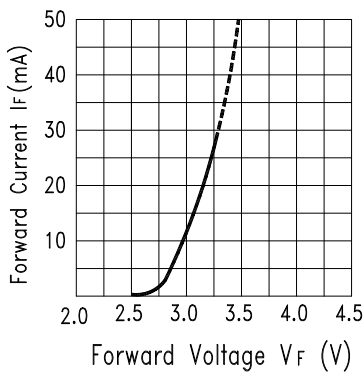


Fig.2 Forward Current vs. Forward Voltage

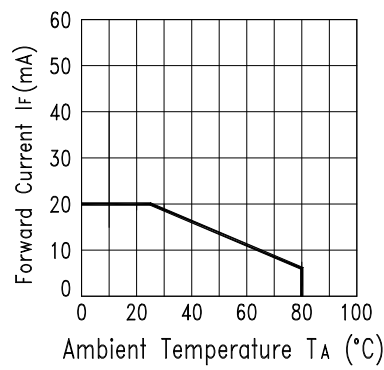


Fig.3 Forward Current Derating Curve

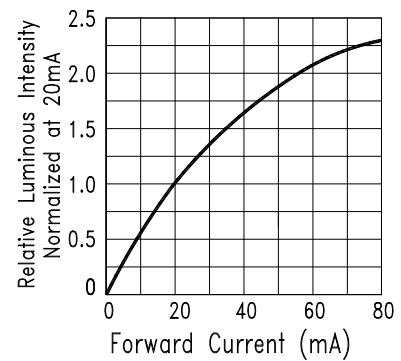


Fig.4 Relative Luminous Intensity vs. Forward Current

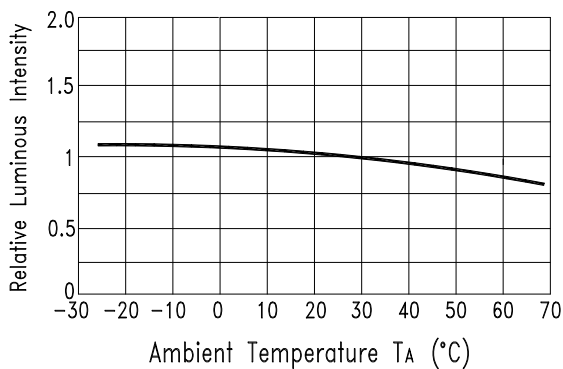


Fig.5 Luminous Intensity vs. Ambient Temperature

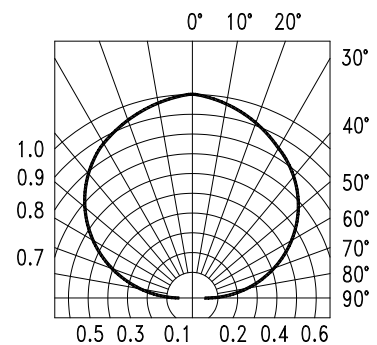


Fig.6 Spatial Distribution

Note: Unless otherwise noted, the test environment temperature is 25 + 3 C

七、 Label identification:

CAT: Light intensity (mcd)

HUE: XY

REF: Voltage (V)

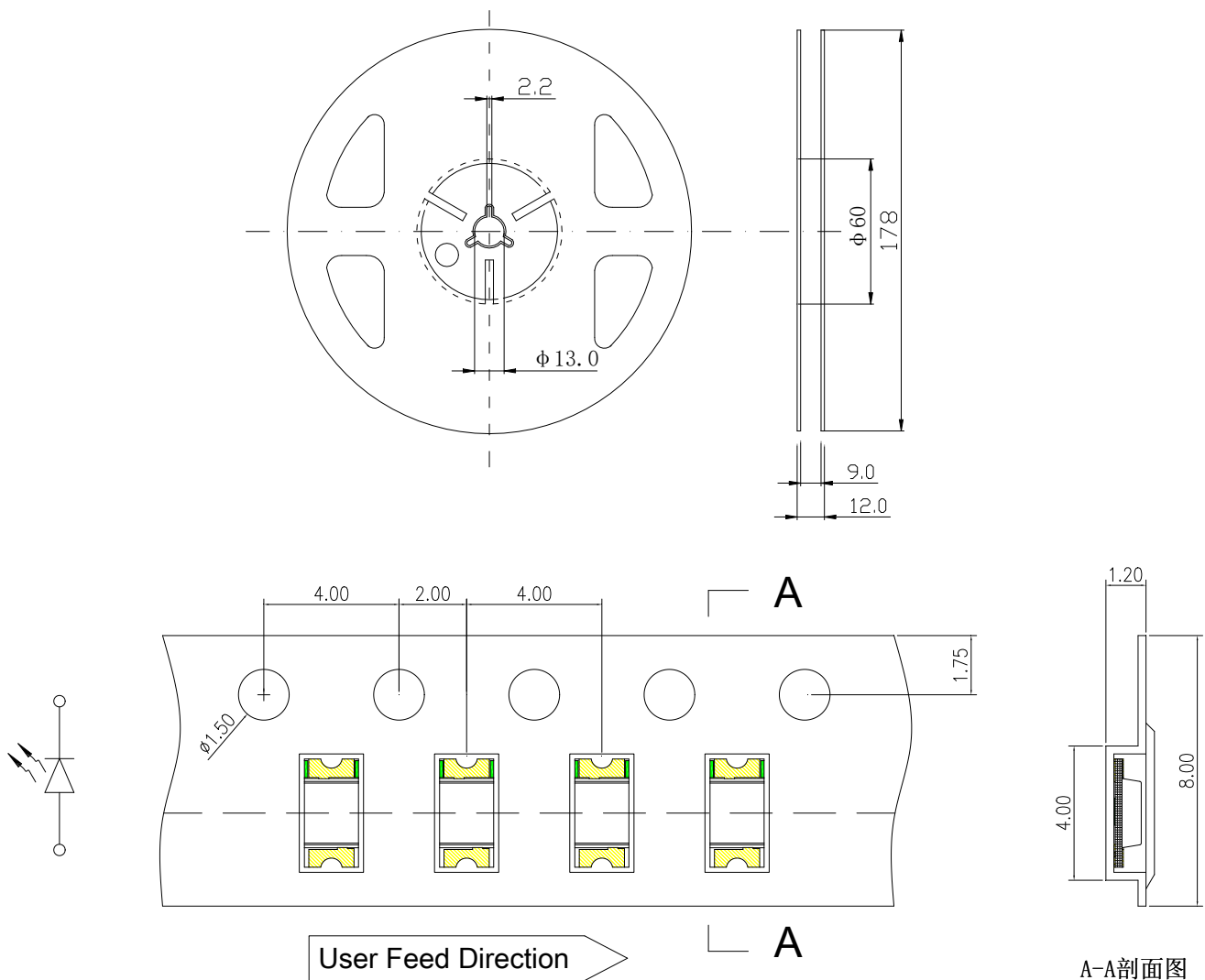
tolerance scopea.

Luminous Intensity: $\pm 15\%$

b. HUE: ± 0.003

c. Forward Voltage: $\pm 0.1V$

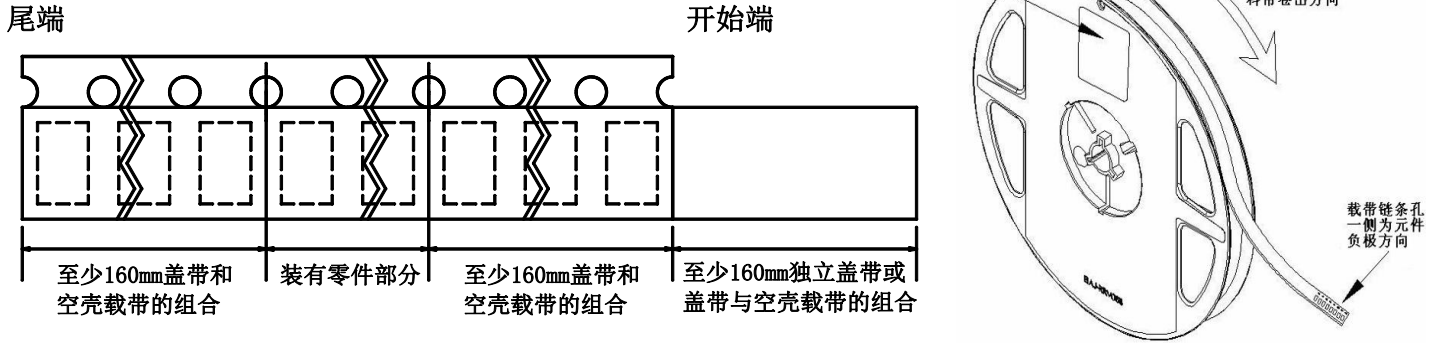
八、 Packing tape and disc size:



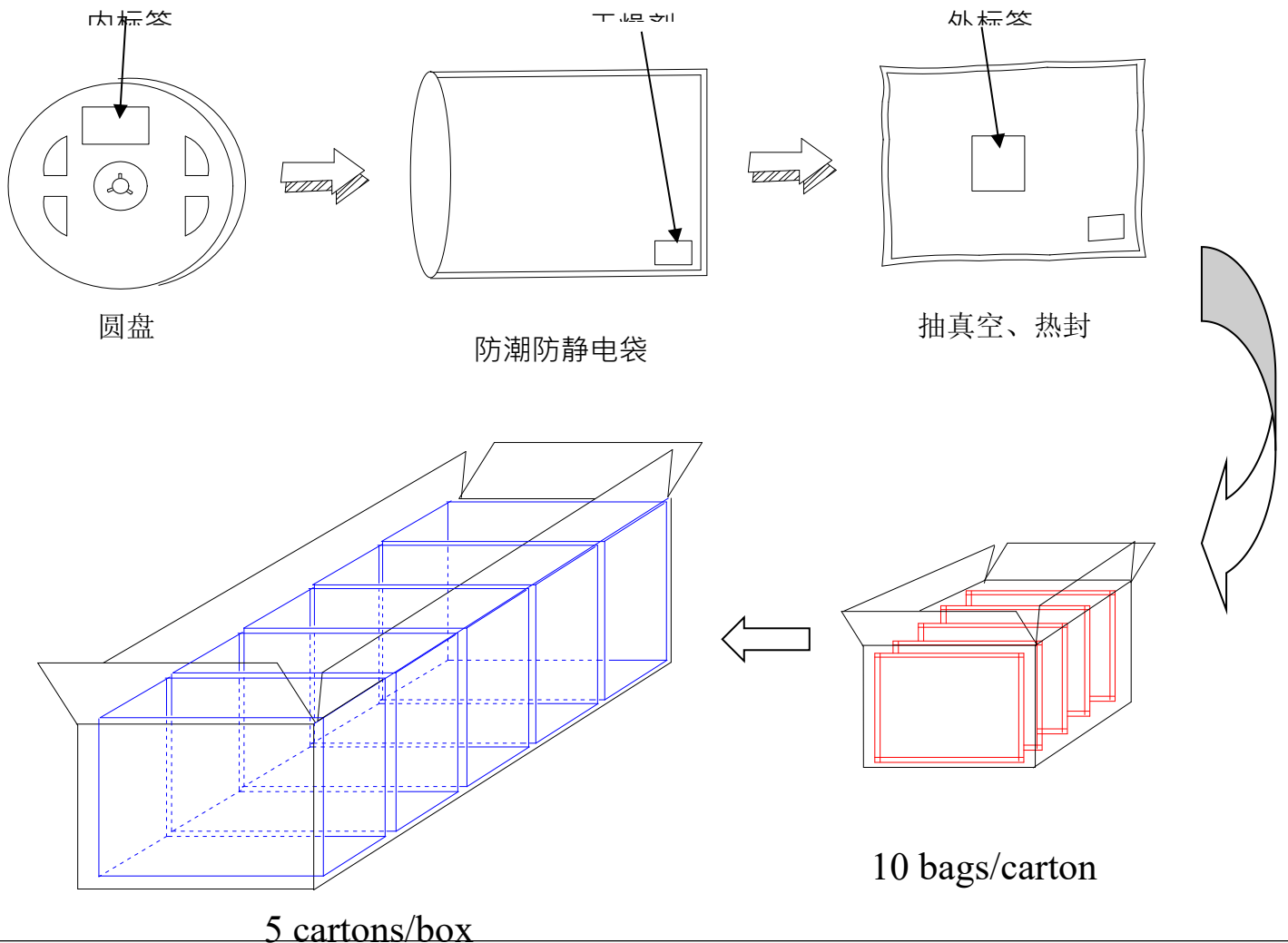
Remarks: 1. Unit: millimeter (mm)

2. Tolerance: ± 0.15 mm unless otherwise noted

九、 Disc and carrier tape unwinding direction and cavity specifications:



十、 Inner packaging and outer packaging:





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十一、 Reliability test:

Poject	TEST ITEM	TEST ENVIRONMENT	TEST TIMES	Failure LED sums (PCS)	Poject
Durability test	Life span	Continuous lighting with maximum rated current at room temperature; Test at 20mA.	1000 hours (- 24 hours, + 72 hours)	MIL-STD-750D:1026 MIL-STD-883D:1005 JIS C 7021:B-1	Durability test
	High temperature and humidity storage	IR-Reflow In-Board, 2 Times Ambient temperature Ta= 65±5 °C , relative humidity RH= 90~95%	240 hours (+ 2 hours)	MIL-STD-202F:103B JIS C 7021:B-11	
	High temperature storage	Ambient temperature Ta= 105±5°C	1000 hours (-24 hours, +72 hours)	MIL-STD-883D:1008 JIS C 7021:B-10	
	Low temperature storage	Ambient temperature Ta= -55±5°C	1000 hours (-24 hours, +72 hours)	JIS C 7021:B-12	
Environment al testing	Temperature cycle	105°C ~ 25°C ~ -55°C ~ 25°C 30mins 5mins 30mins 5mins	10 cycles	MIL-STD-202F:107D MIL-STD-750D:1051 MIL-STD-883D:1010 JIS C 7021:A-4	Environmen tal testing
	Thermal Shock	IR-Reflow In-Board, 2 Times 85 ± 5°C ~ -40°C ± 5°C 10mins 10mins	10 cycles	MIL-STD-202F:107D MIL-STD-750D:1051 MIL-STD-883D:1011	



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	抗锡试验 Tin resistance test	Solder temperature T.sol= 260 ± 5°C	10 ± 1secs 2times	MIL-STD- 202F:210A MIL-STD- 750D:2031 JIS C 7021:A-1	
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(2) Failure criterion

Standard	Item	Test	Failure standard
# 1	Forward voltage (VF)	I _F =20mA	>U.S.L*1.1
	Light intensity (IV)	I _F =20mA	<L.S.L*0.7
	Reverse current (IR)	V _R =5V	>U.S.L*2.0
# 2	Welding reliability	/	The proportion of solder paste covering the pad is less than 95%

★ U.S.L: 规格上限 L.S.L: 规格下限

十二、Precautions for use:

◆ 使用: Use:

1. Excessive temperature will affect the brightness and other performance of the LED, so in order to make the LED have better performance, the LED should be

Keep away from heat sources.

2. Tolerance of photoelectric parameters:

Forward voltage (REF / VF): ± 0.1V

Brightness (CAT / IV): ± 15%

Wavelength (HUE / XY): ± 0.003

◆ Storage:

1. Without opening the original packaging, the recommended storage environment is: temperature 5 °C ~30 °C, humidity below 85%RH. When the stock is more than two months, it should be dehumidified before

use, and the condition is 60°C/8 hours;

2. After opening the original packaging, the recommended storage environment is: temperature 5~30°C, humidity below 60%;

3. LED is a humidity sensitive element. In order to prevent the element from absorbing moisture, it is recommended to store it in a closed container with a desiccant or in a nitrogen moisture-proof cabinet after opening the package;

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

5. If the desiccant fails or the element is exposed to the air for more than 168 hours (7 days), it should be dehumidified;

Baking conditions: 60°C/24 hours.

◆ ESD 静电防护 ESD protection

LEDs (especially blue, emerald, purple, white, and pink LEDs using InGaN structure chips) are electrostatic sensitive components, and static electricity or current overload will destroy the LED structure. LED being damaged by static electricity or current overload may cause abnormal performance, such as excessive leakage current, low VF, or failure to light up and so on. So please pay attention to the following:

1. Wear an anti-static wrist strap or anti-static gloves when touching LEDs;

2. All machinery and equipment, tools, work tables, material racks, etc., should be properly grounded (the grounding impedance value is within 10Ω);

3. Use anti-static material bags, anti-static boxes and anti-static turnover boxes to store or transport LEDs, and it is strictly forbidden to use ordinary plastic products;

4. It is recommended to use ion fans to suppress the generation of static electricity during operation;

5. The electrostatic field voltage is less than 100V within an environmental range of 1 foot away from the LED element.

◆ Cleaning

It is recommended to use alcohol solutions such as isopropanol to clean the LED, and it is strictly forbidden to use corrosive solutions to clean.

◆ Welding

1. For reflow soldering conditions, refer to the temperature curve on the first page;
2. The number of reflow soldering shall not exceed twice;
3. It is only recommended to use manual welding in the case of repair and heavy work. The maximum welding temperature should not exceed 300 degrees, and it must be completed within 3 seconds. The maximum power of the soldering iron should not exceed 30W;
4. During the welding process, it is strictly forbidden to touch the colloid at high temperature;
5. After soldering, it is forbidden to apply external force to the colloid, and it is forbidden to bend the PCB to prevent the components from being impacted.

◆ Other

1. The LED definition described in this specification is applied to the range of ordinary electronic equipment (such as office equipment, communication equipment, etc.). If there are more stringent reliability requirements, especially when component failure or malfunction may directly endanger life and health (such as aerospace, transportation, transportation, medical equipment, safety protection, etc.), please inform us in advance Division business staff;
2. High-brightness LED products may cause damage to human eyes when lit, so avoid looking directly from above;
3. For the purpose of continuous improvement, product appearance and parameter specifications may be modified without prior notice.



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