湖北匡通电子股份有限公司
HUBEI KENTO ELECTRONIC CO.,LTD

产品规格书

SPECIFICATION

产品型号 Model.　　NO：KT-3528G普绿

文件编号 Document.　NO：

版　　次 REV　　NO：

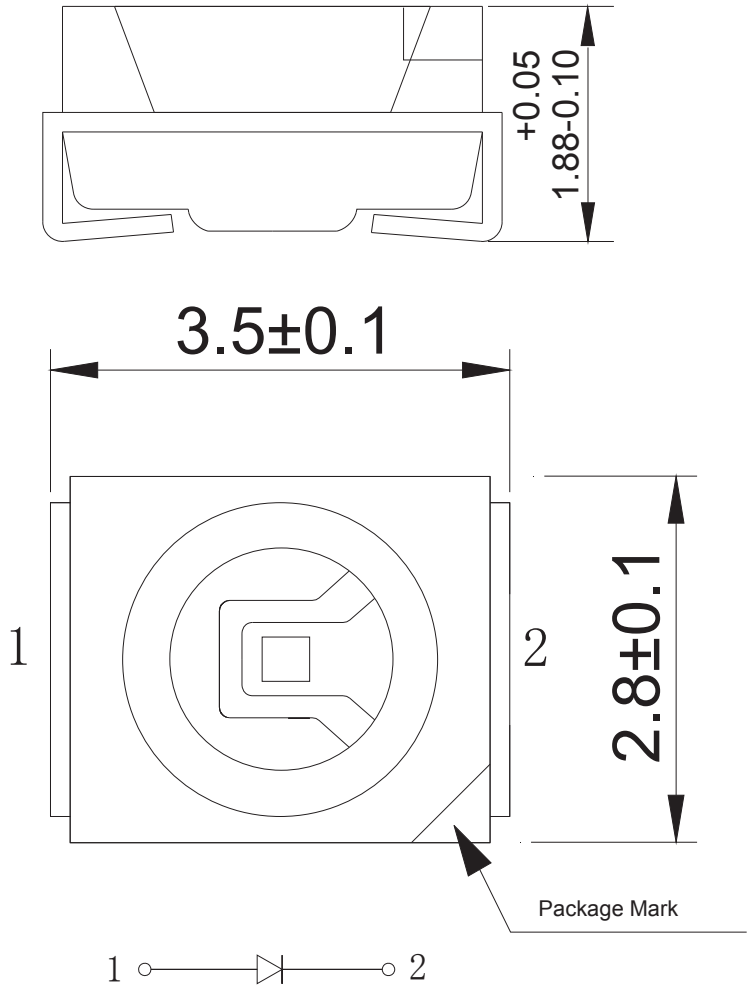
描述 Description:

- 3.5×2.8mm 贴片发光二极管 3.5×2.8mm Top SMD
- 胶体颜色 Colloid Color: 白色
- 发光颜色 Emission Color: 黄绿色
- 半功率角度 Viewing Angle :120°

匡通电子 KenTo			客户承认 Client	
工程 Engingeering	品保 QA	业务 Sell	承认 Accept	盖章 Affirm

1. 外形尺寸 Dimensions

单位(Units):毫米(mm)



注意:

所有尺寸单位为 mm ， 如无特殊说明误差范围为±0.05mm

All dimensions area in mm tolerance is ±0.05mm unless otherwise noted.

2. 光电特性 Electrical / Optical characteristics

(1) 最大限度额定值 Absolute Maximum Ratings (TA=25°C)

项目 Item	符号 Symbol	最大绝对额定值 Absolute Maximum Rating	单位 Unit
正向电流 Forward Current	IF	30	mA
正向峰值电流 Pulse Forward Current	IFP	150	mA
反向电压 Reverse Voltage	VR	9	V
功率消耗 Power Dissipation	PD	350	mW
工作温度 Operating Temperature	Topr	-40°C To +85°C	°C
贮藏温度 Storage Temperature	Tstg	-40°C To +85°C	°C
焊接温度 Soldering Temperature	Tsld	Reflow Soldering: 260°C Hand Soldering : 350°C	for 10sec. for 3sec.

1/10周期, 0.1 msec脉宽

IFP Conditions : 1/10 Duty Cycle, 0.1 msec Pulse Width.

(2) 本样品光电参数Initial Electrical/Optical Characteristics (TA=25°C)

符号 Symbol	项目 Item	单位 Units	最小值 Min.	规格值 Typ.	最大值 Max.	测试条件 Test Conditions
VF	正向电压 Forward Voltage	V	1.9		2.2	IF=20mA
IR	反向电流 Reverse Current	uA	-	-	5	VR=9V
2θ½	发光角度 Viewing Angle	°	-	120°	-	IF=20mA
Iv	发光强度 Luminous Intensity	Mcd	60		120	IF=20mA
X	波长 Chromaticity Coordinate	nm	571		574	IF=20mA
Y						

正向电压允许误差± 0.05V Tolerance of measurement of Vf is ±0.05 V..

亮度允许误差±10% Luminous Intensity Measurement allowance is ± 10%.

色坐标允许误差±0.01 Color Coordinates Measurement allowance is ± 0.01.

(3)发光强度范围 Luminous Intensity Ranking (TA=25°C)

项目 Item	发光颜色	符号 Symbol	测试条件 Test Conditions	最小值 Min.	最大值 Max.	单位 Units
发光强度 Luminous Intensity	黄绿	Iv	IF=20mA	60	120	Mcd

亮度允许误差± 10%

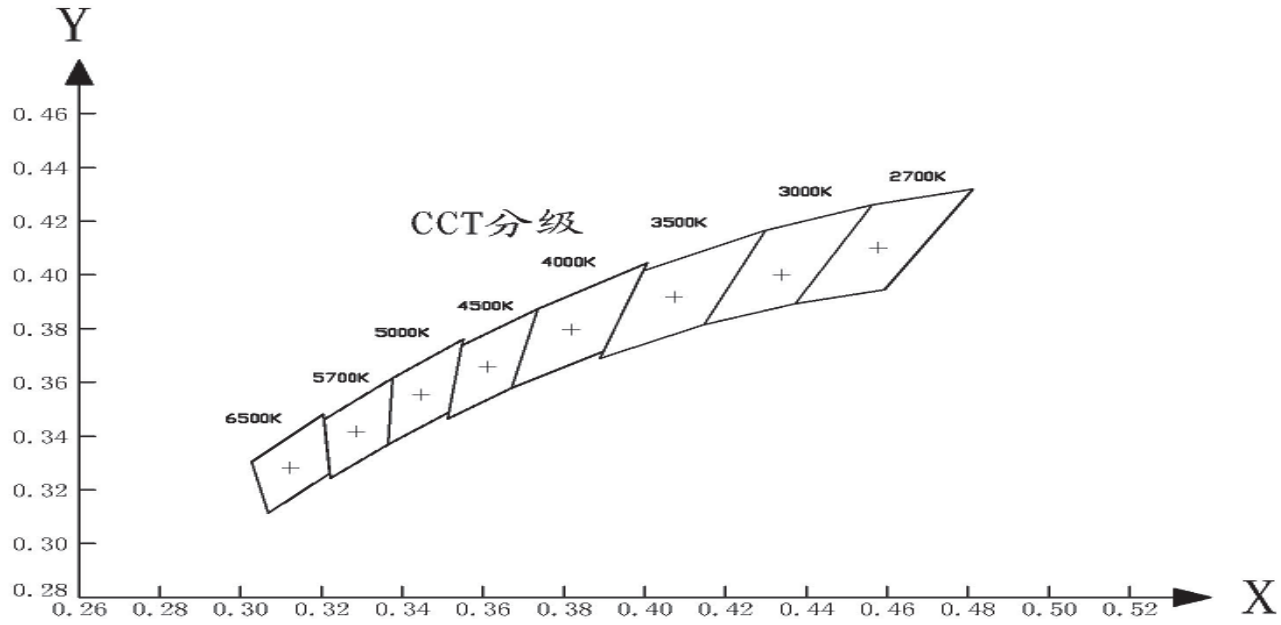
Luminous Intensity Measurement allowance is ± 10%.

以上发光强度最小值和最大值参数仅供参考，但批量出货亮度分光跨度范围为 1：1.3 之内.

Above are the reference for minimum and maximum of luminous intensity which rank in the rate of 1:1.3 in the process of light splitting when manufacturing massively

(4) 色区

色座标(IF=20mA, Ta=25℃)



CCT分级	中心点		四 边 形 的 顶 点							
	X	Y	X	Y	X	Y	X	Y	X	Y
2700k	0.4578	0.4101	0.4813	0.4319	0.4593	0.3944	0.4373	0.3893	0.4562	0.4260
3000k	0.4338	0.4000	0.4562	0.4260	0.4373	0.3893	0.4147	0.3814	0.4299	0.4165
3500k	0.4073	0.3917	0.4299	0.4165	0.4147	0.3814	0.3889	0.3690	0.3996	0.4015
4000k	0.3818	0.3797	0.4006	0.4044	0.3898	0.3716	0.3670	0.3578	0.3736	0.3874
4500k	0.3611	0.3658	0.3736	0.3874	0.3670	0.3578	0.3512	0.3465	0.3548	0.3736
5000k	0.3447	0.3553	0.3551	0.3760	0.3515	0.3487	0.3366	0.3369	0.3376	0.3616
5700k	0.3287	0.3417	0.3376	0.3616	0.3366	0.3369	0.3222	0.3243	0.3207	0.3462
6500k	0.3123	0.3282	0.3205	0.3481	0.3221	0.3261	0.3068	0.3113	0.3028	0.3304

3.特性曲线 Characteristic curve

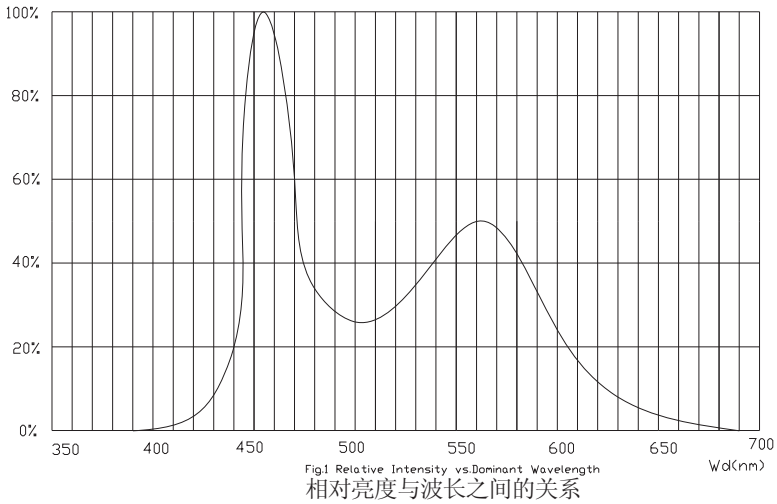
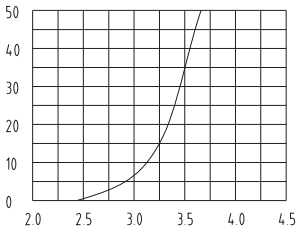
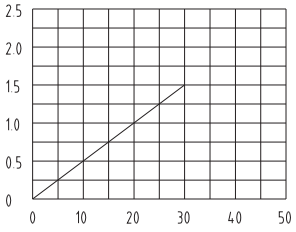


Fig.1 Relative Intensity vs.Dominant Wavelength
相对亮度与波长之间的关系

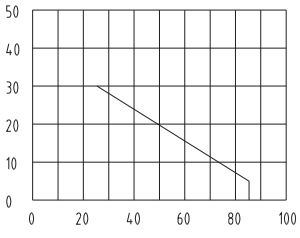
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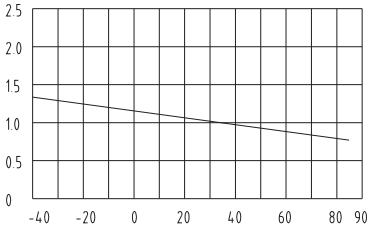
forward Voltage(V)
FORWARD CURRENT VS FORWARD VOLTAGE
正向电流和正向电压的关系曲线图



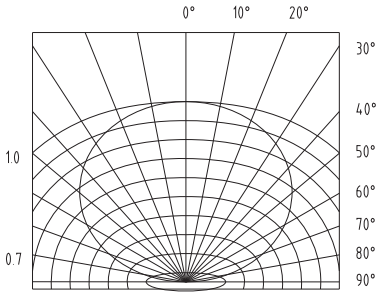
IF-forward Current(mA)
LUMINOUS INTENSITY VS FORWARD CURRENT
亮度和正向电流关系曲线图



Ambient Temperature Ta(° C)
FORWARD CURRENT VS DERATING CURVE
正向电流递减曲线图



Ambient Temperature Ta(° C)
LUMINOUS INTENSITY VS AMBIENT TEMPERATURE
亮度与环境温度关系曲线图



SAPTIAL DISTRIBUTION
发光角度图解

4.可靠性 RELIABILITY

(1)测试项目及结果 Test Items and Results

序号 Items	试验项目 Test Item	试验条件 Standard Test Method	试验设备 Equipment	型号 Type	试验能力 Experiment capacity	参考标准 Reference
1	温度循环 Temperature Cycle	-40℃～25℃～100℃～25℃ 30 分钟 5 分钟 30 分钟 5 分钟 30 mins 5 mins30 mins5mins	恒温箱 thermostat	/	温度：-50℃-150℃ Temperature: -50℃-150℃	JEITA ED-4701 100 105
2	冷热冲击 Thermal Shock	-40℃～100℃ 15 分钟 15 分钟 15mins 15 mins	恒温箱 thermostat	/	温度：-50℃-150℃ Temperature: -50℃-150℃	MIL-STD-202G
3	高温储存 High Temperature Storage	Ta=100℃	恒温箱 thermostat	/	温度：-50℃-150℃ Temperature: -50℃-150℃	JEITA ED-4701 200 201
4	低温储存 Low Temperature Storage	Ta=-40℃	恒温箱 thermostat	/	温度：-50℃-150℃ Temperature: -50℃-150℃	JEITA ED-4701 200 202
5	常温寿命试验 Steady State Operating Life	Ta=25℃	老化架 Aging rack	/	/	
6	高温高湿寿命试验 Steady State Operating Life of High Humidity & Temperature	Ta=60℃ RH=90% IF=20mA(R,G,Y)/15mA(W,B)	高温试验箱 high-temperature test chamber	/	/	
			空气加湿器 air humidifier	/	/	
			空气湿度表 air hygrometer	/	/	
7	可焊性（回流焊） Soderability (Reflow Sodering)	Tsol=235℃±5℃, 使用助焊剂 With soldering flux	回流焊焊机 Reflow Soldering Machine	/	/	JEITA ED-4701 300 303
8	耐焊性(回流焊） Resistance to Soldering Heat(Reflow Soldering)	Tsol=260℃,10 秒	回流焊焊机 Reflow Soldering Machine	/	/	JEITA ED-4701300 301

5.注意事项 Cautions

(1) 焊接条件 Soldering Conditions

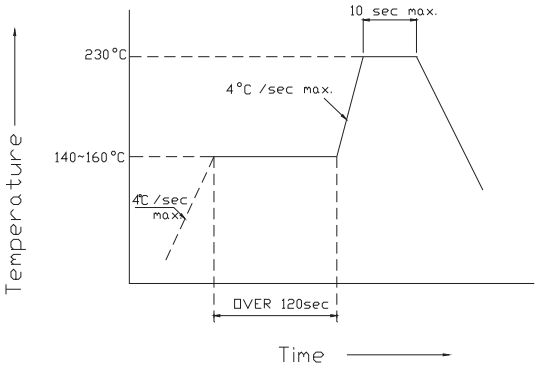
本产品最多只可回焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回焊.

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

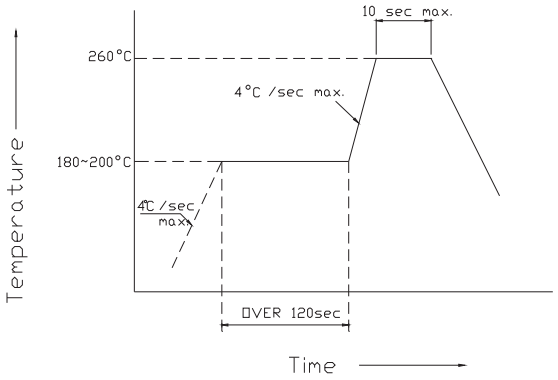
推荐焊接条件(Recommended soldering conditions)

回流焊接 Reflow Soldering			手工焊接 Hand Soldering	
	有铅Lead Solder	无铅 Lead-free Solder		
预热温度Pre-heat 预热时间Pre-heat time 峰值温度Soldering time 焊接时间Peak temperature 条件Condition	140 ~ 160°C 120 sec. Max. 230°C Max. 10 sec. Max. 参考下图	180 ~ 200°C 120 sec. Max. 260°C Max. 10 sec. Max. 参考下图	温度Temperature 焊接时间Soldering time	350°C Max. 3 sec. Max. (one time only)

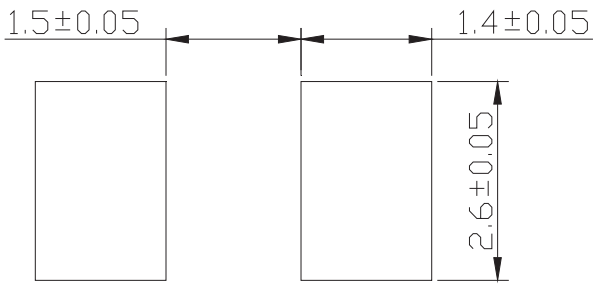
有铅回焊（Lead Solder）



无铅回焊 (Lead-Free Solder)



推荐焊盘式样(Recommended Soldering Pattern) 单位:毫米(Units:mm)



(2)静电 Static Electricity

触摸 LED 时,推荐使用防静电手腕带或防静电手套.

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

所有装置、设备、机器均应接地.

All devices, equipment and machinery must be properly grounded.

静电损坏的 LED 会显示出异常特征:正向电压变低或在低电流时死灯.标准: I_F=0.5mA 时, V_F > 2.0V

Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (V_F > 2.0V at I_F=0.5mA)

(3)防潮包装 Moisture Proof Package

使用防潮包装

It is recommended that moisture proof package be used .

(4)储藏 Storage

打开包装袋之前,LED 在温度为 30°C 或更低湿度 70%RH 以下,可保存一年.

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.

（5）打开包装之后,应在 24hrs 内焊接完毕.

After opening the package, 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).

下列情况发生时，须要在焊接前重新烘烤 75 ± 5°C,12 小时以上。

A．当包装袋破损漏气

B．打开包装后在 24hrs 内未焊接完毕

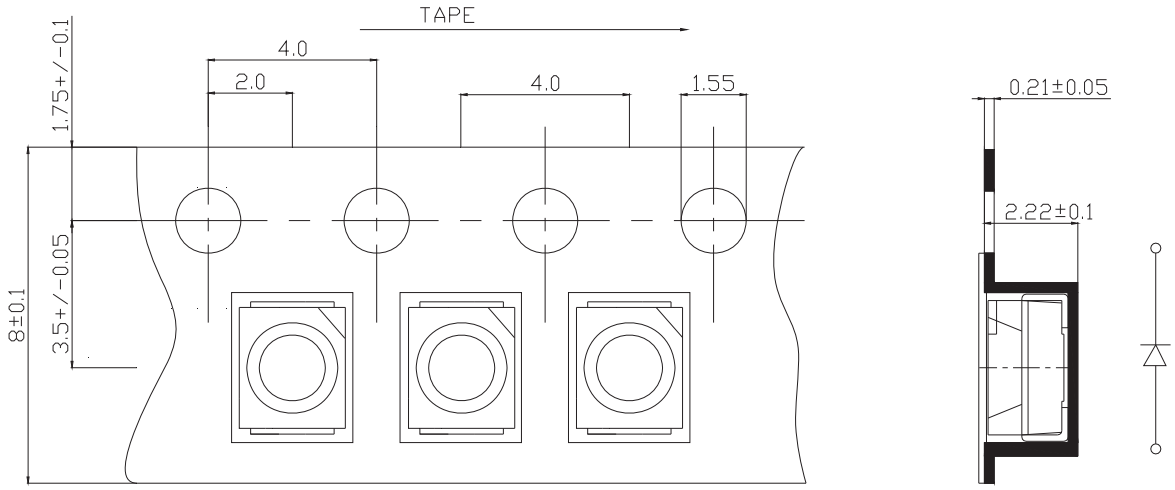
C．LED 超过存储时间。.

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions Baking treatment : more than 12 hours at 75 ± 5°C.

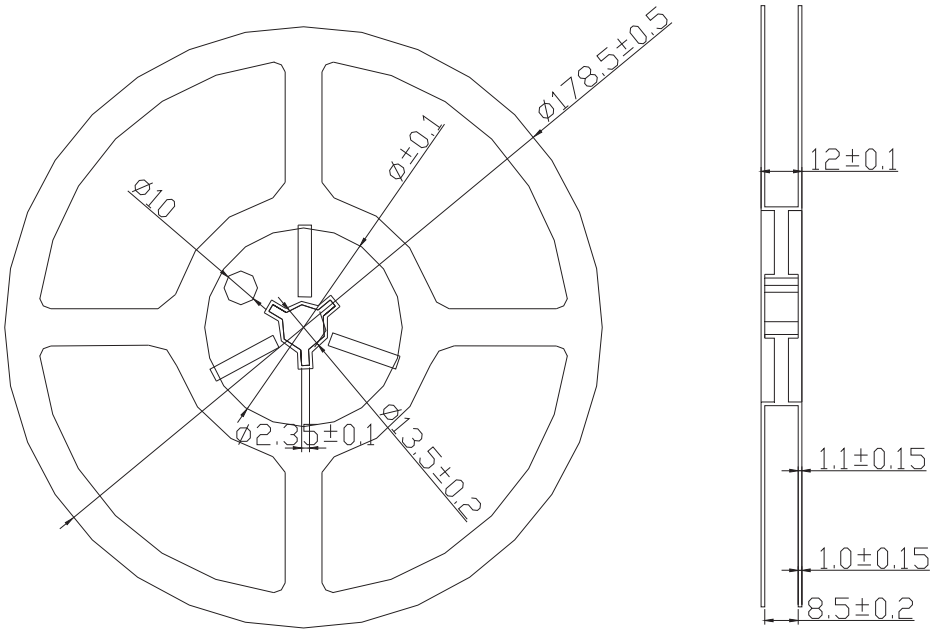
6. 包装 PACKAGING

(1)LEDS 在装带之后纸箱包装. The LEDs are packed in cardboard boxes after taping.

(2)装带规格 Taping Specifications (单位:毫米 Units:mm)



(3)卷轴尺寸 Reel Dimension



每卷数量 2000 个/卷 PACKAGE: 2000Pcs/Reel

(4) 最小包装标签注明以下:产品名称.批号.光电范围.数量.

The label on the minimum packing unit shows ; Part Number, Lot Number, Ranking, Quantity.

(5)请注意防水防潮 Keep away from water，moisture in order to protect the LEDs.

(6) 须采取适当防护措施,以防包装箱跌落或受到强力撞击造成对产品的损伤.

The LEDS may be damaged if the boxes are dropped or receive a strong impact against them. so precautions must be taken to prevent any damage.