

# 产品规格书

## PRODUCT SPECIFICATION

产品型号 Model. P/N NO: DR-1010-AB-RGB

文件编号 Document. NO: RT03-WI-SP001

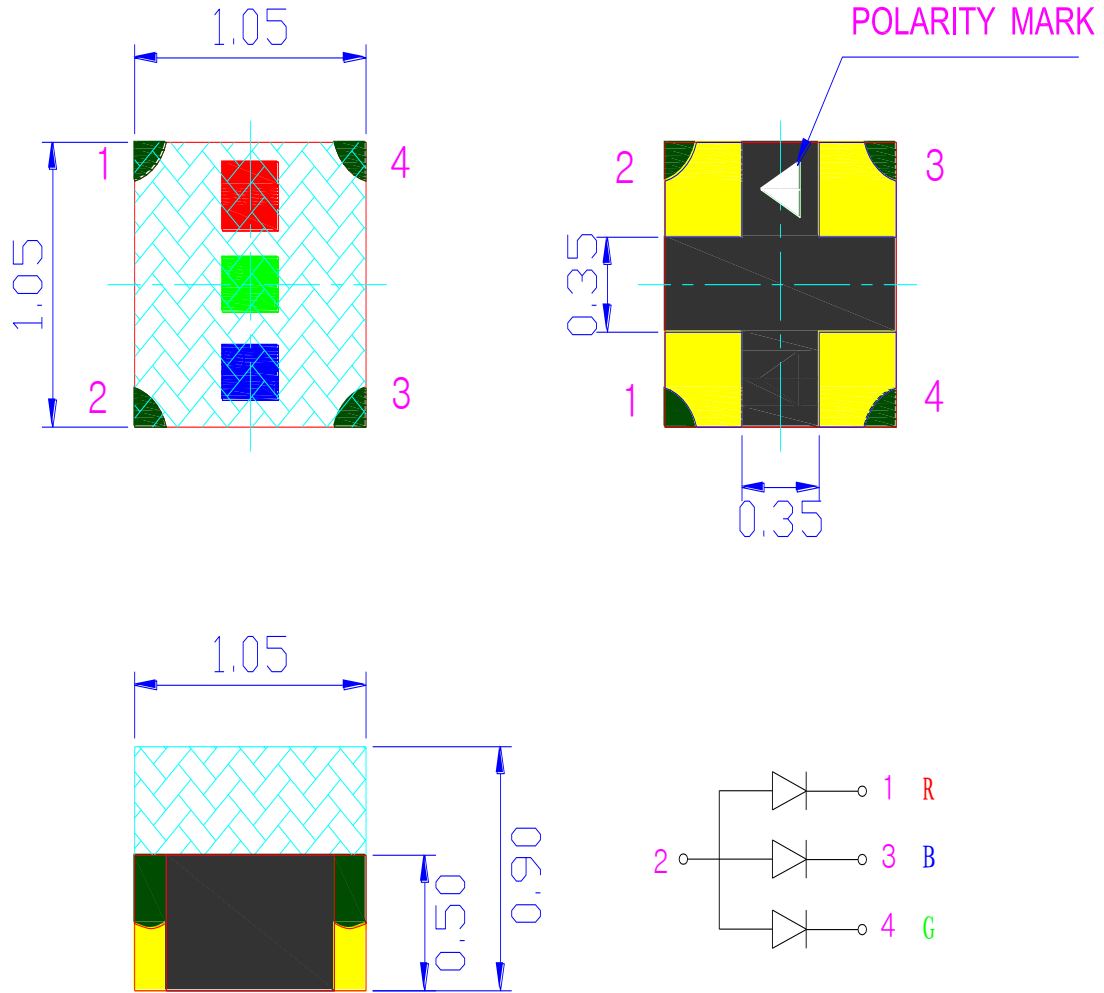
版 次 REV. NO: A1

描述 Description:

- 1.05×1.05mm 贴片发光二极管 1.05×1.05mm Chip SMD
- 胶体颜色 Colloid Color: 黑色磨砂 Black Matting
- 发光颜色 Emission Color: 全彩 Full Color
- 半功率角度 Viewing Angle : 120°

广东德豪锐拓技术有限公司				客户承认（加盖公章）	
技术部		品保部	市场部	公司名称:	
制作	审核	QA	业务员	客户技术部门	客户采购部门

1.外形尺寸 Dimensions



备注:

所有尺寸单位为 mm ， 如无特殊说明误差范围为  $\pm 0.1$ mm。

All dimensions are in mm, tolerance is  $\pm 0.1$ mm unless otherwise noted.

## 2. 光电特性 Electrical / Optical characteristics

### (1) 最大限度额定值 Absolute Maximum Ratings (TA=25±5°C)

项目 Item	符号 Symbol	最大额定值 Absolute Maximum Rating			单位 Unit
		Red	Green	Blue	
正向电流 Forward Current	IF	20	20	20	mA
正向峰值电流 Pulse Forward Current	IFP	50	50	50	mA
功率消耗 Power Dissipation	PD	44	68	68	mW
反向电压 Reverse Voltage	VR	5			V
工作温度 Operating Temperature	Topr	-30 To +85			° C
贮藏温度 Storage Temperature	Tstg	-40 To +100			° 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±5°C)

符号 Symbol	项目 Item	单位 Units	发光颜色 Device	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	Red	—	2	—	IF=8mA
			Green	—	2.8	—	IF=3mA
			Blue	—	2.8	—	IF=2mA
IR	反向电流 Reverse Current	uA	-	—	—	5	VR=5V
2θ 1/2	发光角度 Viewing Angle	°	-	—	120	—	IF=8/3/2mA
Iv	发光强度 Luminous Intensity	mcd	Red	—	27	—	IF=8mA
			Green	—	37	—	IF=3mA
			Blue	—	5.0	—	IF=2mA
λ D	主波长 Dominate Wavelength	nm	Red	—	622	—	IF=8mA
			Green	—	528	—	IF=3mA
			Blue	—	468	—	IF=2mA

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%.

波长允许误差±1nm。 Color Coordinates Measurement allowance is ± 1nm.

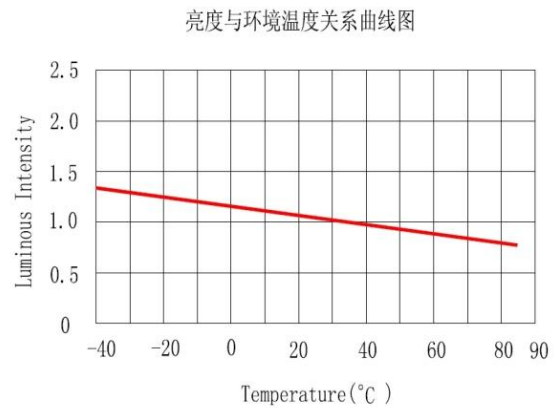
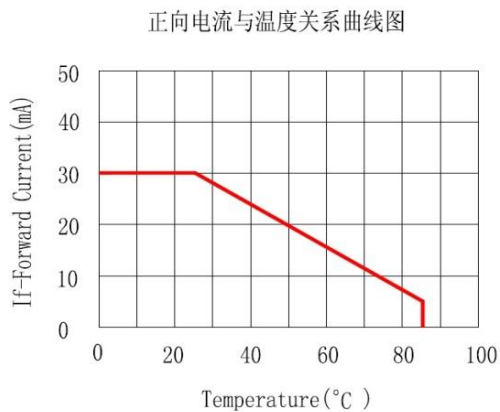
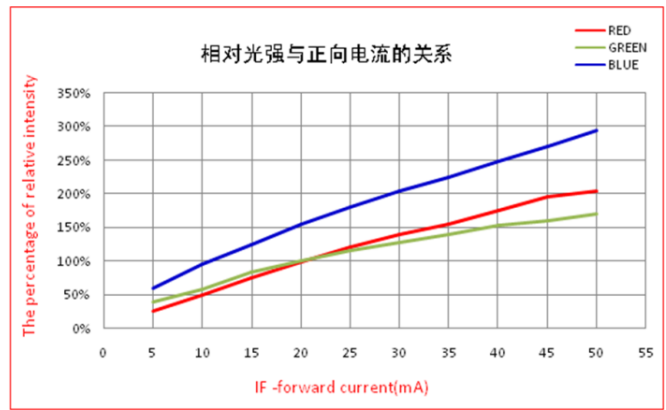
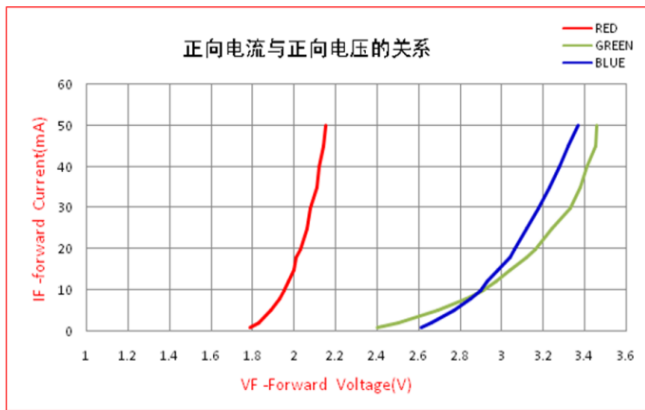
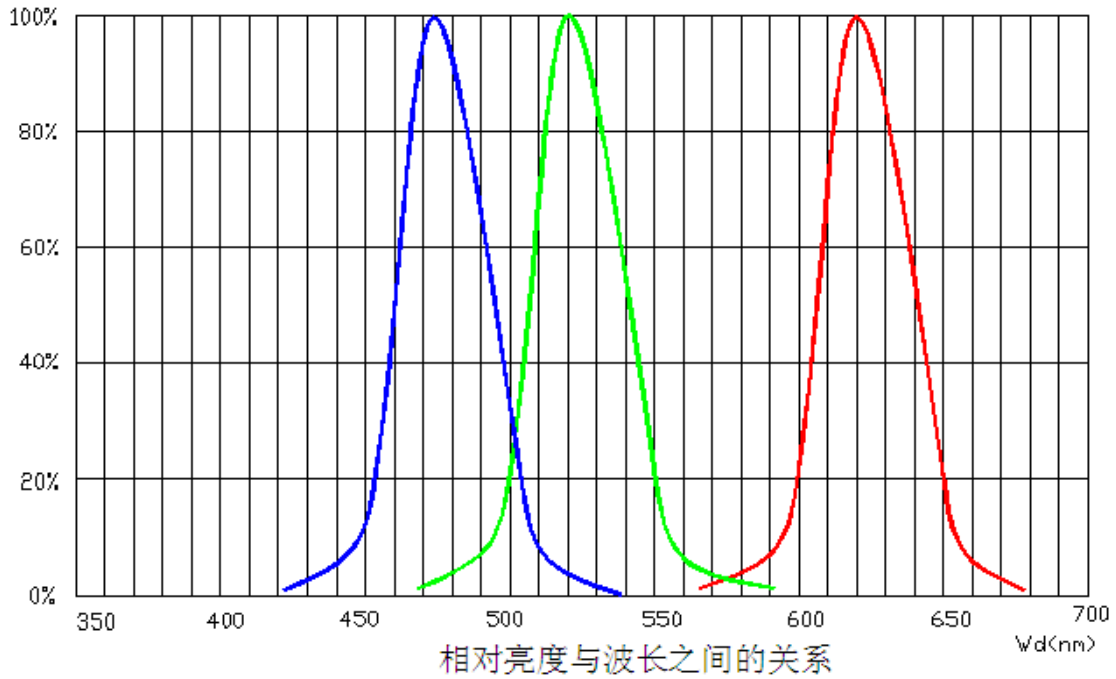
以上发光强度最小值和最大值参数仅供参考, 但批量出货亮度分光跨度范围为 1: 1.2 之内。

Above are the reference for minimum and maximum of luminous intensity which ranks in the rate of 1:1.2 in the process of light splitting when manufacturing massively.

以上波长最小值和最大值参数仅供参考, 但批量出货波长分光跨度范围为 R:5nm、G:3nm、B:3nm 之内。

Above are the reference for minimum and maximum of wavelength, while it ranks as: R: 5nm / G: 3nm / B: 3nm when light splitting in mass manufacturing.

### 3. 特性曲线 Characteristic curve



#### 4. 可靠性 RELIABILITY

##### (1) 测试项目及结果 Test Items and Results

序号	试验项目	试验条件	持续时间	取样数	接收水准(不合格数量/抽样总数)
1	冷热冲击	T <sub>a</sub> = - 40 °C ~ 25 °C ~ 100°C~25°C T=30min-5min-30min- 5min	循环 100 回合	22	0/22
2	高温储存	T <sub>a</sub> =100°C	1000 小时	22	0/22
3	低温储存	T <sub>a</sub> =-40°C	1000 小时	22	0/22
4	常温寿命 试验	T <sub>a</sub> =25±5°C I <sub>F</sub> =20mA	1000 小时	22	0/22
5	高温高湿 寿命试验	T <sub>a</sub> =85°C RH=85% I <sub>F</sub> =20mA	1000 小时	22	0/22
6	耐焊性(回 流焊)	T <sub>so1</sub> =260°C, 10 秒 预处理: 35°C 95%RH 96 小时	焊接三次, 每次 10 秒	22	0/22
备注	以上试验项目如与客户试验要求存在差异的或者特殊客户特殊要求的可根据实际情况按照客户的要求进行试作, 客户未要求的按我司试验标准试作。不同产品使用不同电流进行测试。				

## 5. 注意事项 Cautions

### (1) 焊接条件 Soldering Conditions

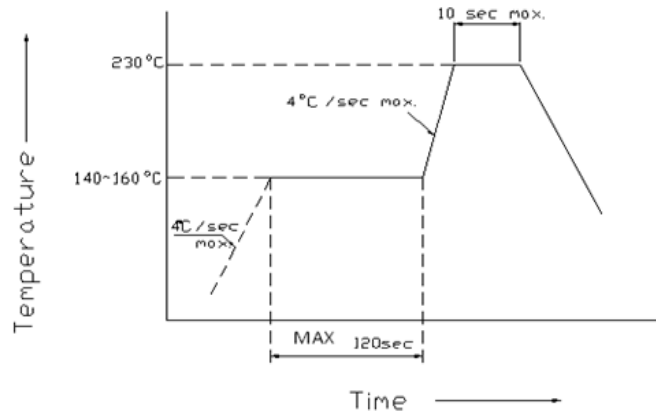
本产品最多只可回焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回焊。

Reflow Soldering should not be done more than two times; and cooling process to normal temperature is required between first and second soldering process.

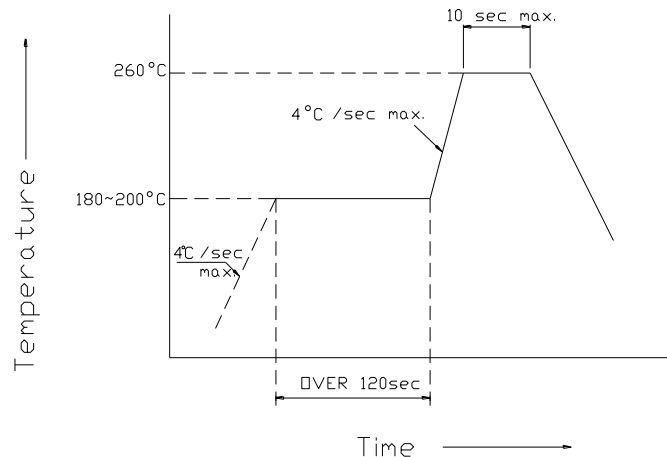
推荐焊接条件(Recommended soldering conditions)

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

有铅回焊 (Lead Solder)



无铅回焊 (Lead-Free Solder)



## 备注 Remarks:

如非必要，请尽量使用有铅焊接。

If necessary, please use leaded soldering as more as possible.

温度过高对 LED 产品有非常严重的热损伤，确保回流区实测最高温度不超过 230 度，且不超过 10 秒钟。

High temperature causes serious heat damage to LED products; make sure the temperature of the soldering area is below 230°C; and each terminal is to go for less than 10 sec.

## (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：IF=0.5mA 时，VF > 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: (VF > 2.0V at IF=0.5mA)

## (3) 防潮包装 Moisture Proof Package

使用防潮包装 Moisture proof package is used .

## (4) 使用注意事项 Cautions:

4.1 在开包装之前，请先检查包装袋有无漏气，如果有漏气现象，请退回我司重新烘烤除湿包装后再使用。

Please check if there is air leak before opening the package; and if so, please return the goods back to take drying process for later using.

4.2 抽真空包装材料未超过 60 天可正常使用，包装袋开启后，产品必须：

Products can be used within 60 days after packaging; after that, they must be:

4.2.1 在 24hrs 内焊接完毕。

Be soldered within 24 hrs (1 day).

4.2.2 要在规定环境条件中使用： 温度:30°C 以内 湿度:60%RH 以下。

Be operated at the condition of 30°C or less and humidity less than 60%RH.

4.2.3 存储低于 30%RH。

Be stored at humidity less than 30%RH.

4.3 抽真空包装材料超过 60 天(含)以上未使用，再使用时需重新拆铝箔袋取出烘烤 65°C/24H 除湿后才可使用。

Products cannot be used for or over 60 days after being packaged unless opening the package and take drying our process in 65°C/24H.

4.4 材料拆装后超过 24H 未用完，需烘烤 65°C/24H 除湿后才可使用。

Products need to be dried out for 65°C/24H, if they were not used within 24 hrs after opening the package.

## 6. 包装 PACKAGING

(1) 标签说明:

Notes of Label:

① 在使用我公司 SMD 产品生产时请对应好我司产品型号是否一致不同型号产品不能混用。

Please make sure the type of our SMD products, different types cannot be mixed when using.

② 不同生产批号产品不能混用同一块显示屏（型号相同和参数相同也同样不能用在同一显示屏）。

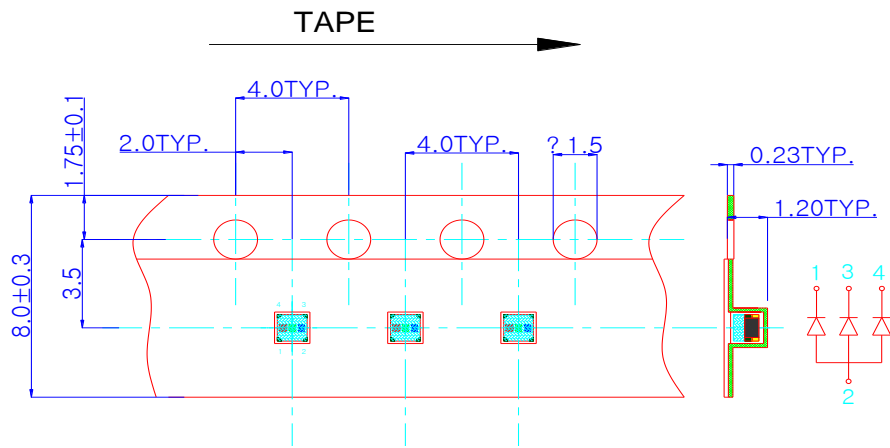
Products in different lot number cannot be used in one display panel together, even with the same type and parameter.

③ 不同生产批号的产品参数相同不能混用。

Different type of products with same parameter cannot be mixed when using.

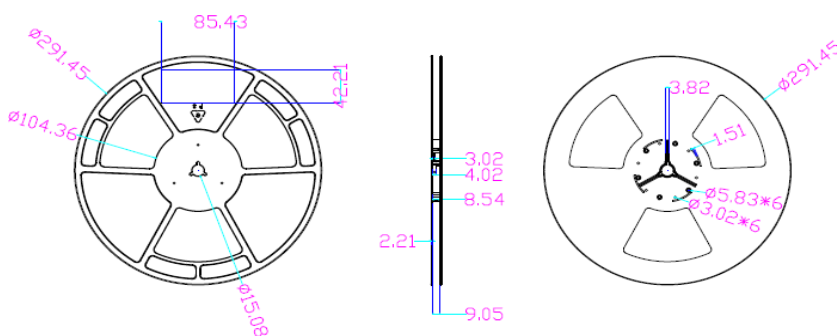
(2) LEDS 在装带之后纸箱包装. The LEDs are packed in cardboard boxes after taping.

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



每卷数量:3000 个/卷 PACKAGE: 3000pcs/Reel

(4) 卷轴尺寸 Reel Dimension



(5) 最小包装标签注明以下:产品名称、批号、参数范围、数量。

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

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

(7) 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.