

JIANGSU YU DA TECHNOLOGY ELECTRONIC CO., LTD

# Specification for Approval

※ 日期 (DATE) : 2023 年 12 月 22 日

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型号 PART NUMBER:

YD8011DARL



Page1 / 5

#### ■ 产品特征 FEATURES:

- 高可靠性和高稳定性

**High intensity and reliability**

- 高品质、和低功耗、低成本

**High quality, Low power requirement and low cost**

- IC 易兼容、易装配

**IC compatible, Easy assembly**

- 符合 RoHS 指令要求

**Meet RoHS EU Directive**

- 人体防静电承受能力 2000V (HBM)
- ESD 2000V (HBM)

#### ■ 产品描述 DESCRIPTION:

- 单位数码管 One digits 7 segment LED display

- 极性: 共阴 Common Cathode

- 表面颜色 Surface Color: 黑面 Black surface

- 笔段颜色: 白胶 White segment

- 发光颜色 luminous Color:

1、红色 Red

2、-

3、-

4、-

5、-

- 晶片材质

1、AlGaInP

2、-

3、-

4、-

5、-

型号 PART NUMBER:

YD8011DARL



Page2 / 5

■ 产品最大绝对参数值 (Ta: 25℃) ABSOLUTE MAXIMUM RATINGS AT Ta=25℃:

| PARAMETER<br>项 目   | SYMBOL<br>符 号 | RED<br>红色   |  |  |  | UNIT<br>单 位 |
|--|---------------|-------------|--|--|--|-------------|
| Power Dissipation Per Segment<br>功 耗   | PAD           | 60          |  |  |  | mw          |
| Reverse Voltage Per Segment<br>反 向 耐 压   | VR            | 5           |  |  |  | V           |
| Continuous Forward Current Per Segment<br>最大使用电流   | IAF           | 20          |  |  |  | mA          |
| Peak Forward Current Per Segment(Duty-0.1,1KHz)<br>最大峰值电流                                      | IPF           | 60          |  |  |  | mA          |
| Operating Temperature Range<br>工 作 温 度   | TOPr          | -20℃ to 80℃ |  |  |  |             |
| Storage Temperature Range<br>贮 藏 温 度   | Tstg          | -30℃ to 80℃ |  |  |  |             |
| Lead Soldering Temperature 260℃ at 1.6mm From Body for 3 second<br>焊接温度 260℃/3 秒 距离胶体 1.6mm 以上 |               |             |  |  |  |             |

■ 产品光电参数值 (Ta: 25℃) ELECTRICAL/OPTICAL CHARACTERISTICS AT Ta=25℃:

| PARAMETER<br>项 目                           | SYMBOL<br>符 号 | TEST CONDITION<br>测 试 条 件 | Color<br>颜色 | MIN<br>最小值 | TYP<br>标准值 | MAX<br>最大值 | UNIT<br>单位 |
|--|---------------|---------------------------|-------------|------------|------------|------------|------------|
| Forward Voltage ,Per Segment<br>正 向 压 降    | VF            | IF=20mA                   | RED<br>红色   | 1.9        | -          | 2.0        | V          |
| Reverse Current , Per Segment<br>反 向 漏 电 流 | IR            | VR=5V                     | RED<br>红色   |            |            | 10         | μA         |
| Peak Emission Wavelength<br>峰 值 波 长        | λp            | IF=20mA                   | RED<br>红色   | 622.5      |            | 625        | nm         |
| Luminous Intensity Per Segment<br>法 向 光 强  | IV            |                           |             | 110        |            | 126        | mcd        |

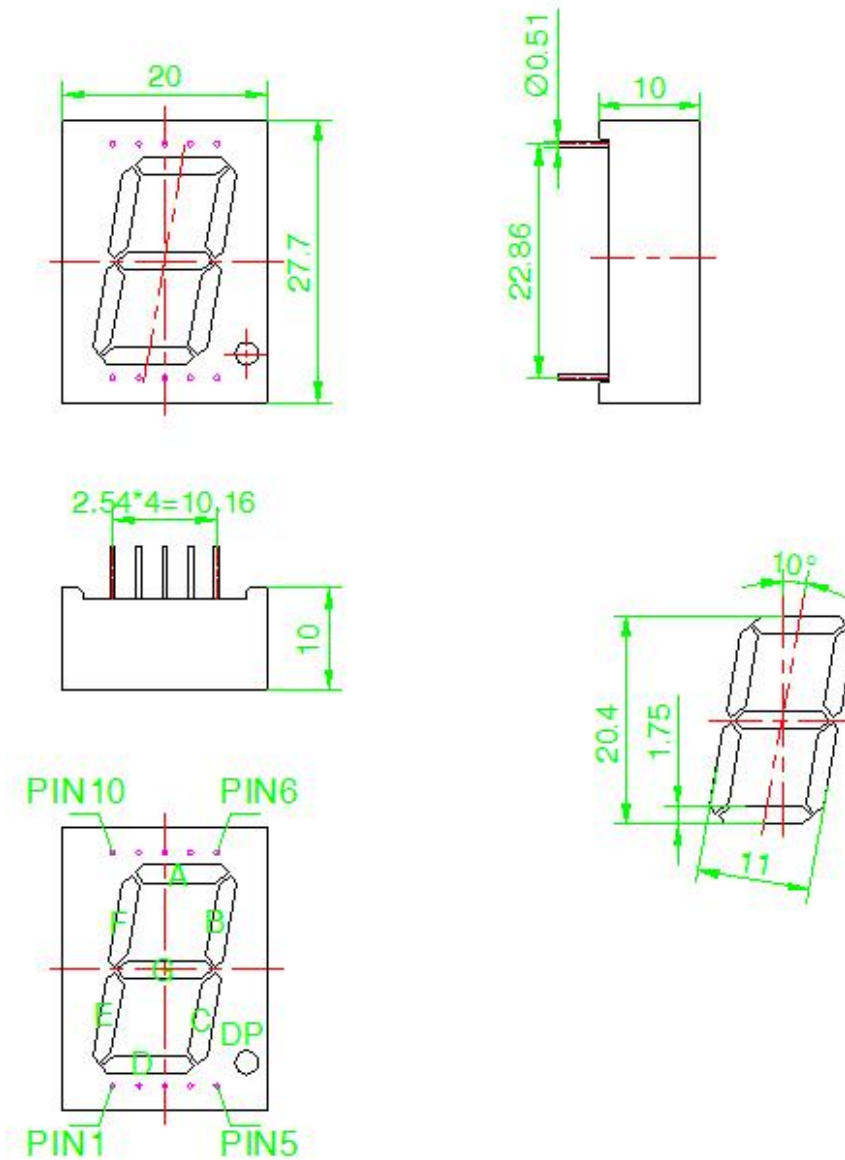
型号 PART NUMBER:

YD8011DARL



Page3 / 5

## ■ 产品尺寸 Dimensioned Drawing (尺寸图)



NOTES : 1.单位为毫米. All dimensions are in millimeters. (Inches)

2. 误差一般为 $\pm 0.25$ . Tolerance is  $\pm 0.25(0.010)$  unless otherwise specified.

型号 PART NUMBER:

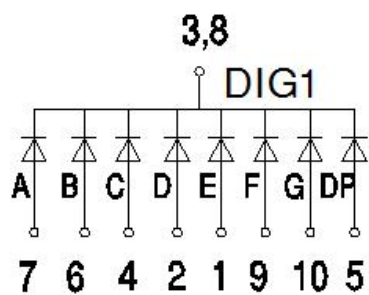
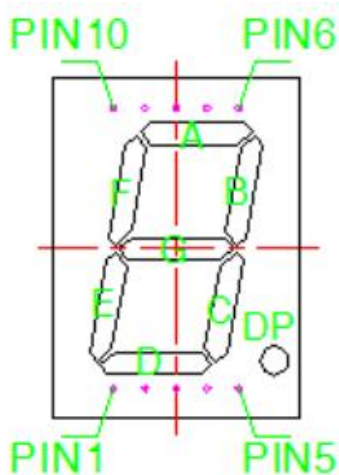
YD8011DARL



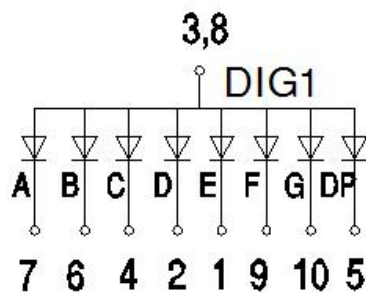
Page 4 / 5

## ■ 产品原理图 Schematic Diagram(原理图)

A:共阴 B:共阳



D8011A/B原理图 共阴



D8011A/B原理图 共阳

型号 PART NUMBER:

YD8011DARL



Page5 / 5

### ①保存条件 (Storage Conditions) :

- (1) : 保存温度 (Storage Temperature) :  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$
- (2) : 保存相对湿度 (Storage Relative Humidity) :  $50\% \pm 10\%$
- (3) : LED 长期保存会产生静电, 对 LED 的光电性能造成影响, 严重时会导致缺亮。

The long term storage of LED results in the static electricity which will deteriorate the optical-electrical characteristics of LED, and it will cause the emitting failure under extreme circumstance.

- (4) : 保存环境中避免有酸, 碱以及腐蚀性气体存在, 同时避免强烈震动。  
Acid, alkali and corrosive gases are strictly prohibited in the storage environment, and strong quake must be avoided.

### ②焊接条件 (Soldering Conditions) :

- (1) : 焊接温度 (Soldering Temperature) :  $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 。
- (2) : 焊接时长 (Soldering Duration) :  $\leq 3\text{s}$ 。
- (3) : 烙铁功率 (Soldering Iron Power) :  $\leq 30\text{W}$ 。
- (4) : 焊点位置必须离产品实体大于 1.6mm。

The soldering point must be more than 1.6mm away from the products body.

### ③静电保护 (Electrostatic Protection) :

- (1) : 使用 LED 时佩戴防静电手腕带以及使用防静电毯, 相关设备, 仪器正确接地。  
Please wear electrostatic prevention wrist strap and use electrostatic prevention blanket when using LED, and the relevant machines and equipments must be connected to ground.

- (2) : 使用 LED 时, 将 LED 置于离子风机产生的气流中。  
Please place LED in the environment of ionizing air flow when using LED.

### ④光效果检验条件 (Test Conditions) :

- (1) : 在环境照度小于 9Lux 的条件下目测, 视距应在 25-30cm。  
Visual check is done when the ambient illuminance is less than 9 Lux and the visual distance is between 25cm and 30cm.

- (2) : 黑白点大小为  $0.1\text{mm} \leq \phi < 0.15\text{mm}$  最多允许有 3 个, 且间距必须大于 1cm。

The size of the black and white dot is  $0.1\text{mm} \leq \phi < 0.15\text{mm}$  and the acceptable amount of the dot is 3. The distance must be more than 1cm between any 2 dots.

- (3) : 黑白点大小为  $0.15\text{mm} \leq \phi < 0.20\text{mm}$  最多允许有 2 个, 且间距必须大于 1cm。

The size of black and white dot is  $0.15\text{mm} \leq \varnothing < 0.20\text{ mm}$  and the acceptable amount of the dot is 2. The distance must be more than 1cm between any 2 dots.

(4)：黑白点大小为  $0.20\text{mm} \leq \varnothing < 0.25\text{mm}$  最多允许有 1 个。

The size of the black and white dot is  $0.20\text{mm} \leq \varnothing < 0.25\text{mm}$  and the acceptable amount of the dot is 1.

(5)：发光区域划伤 $\varnothing \leq 0.1\text{mm}$ ，长度 $< 1\text{ mm}$ ，最多允许 1 条。

The scar in the light emitting area is with  $\varnothing \leq 0.1\text{mm}$ , as well as the length is less than 1 mm and the acceptable amount of this scar is 1.

(6)：不发光区域的划伤，且该划伤在发光时不可见，则可接受。  
It is acceptable when the scar is not in the light emitting area, and the scar is not observable when the product is working.

⑤尺寸检测条件（Size Checking condition）：

依据图纸，使用游标卡尺，注意检测人为误差。  
Vernier is used to check the mechanical dimension of the product, which is labelled in this data sheet. Please pay attention to the error which is caused by people.

⑥电性能检测条件：

在恒定的电流下，执行《QA 成品检验方法》功能的相关内容。  
Perform the function related contents in ‘QA Final Products Test Method’ under constant current.

■变更履历 REVISED RECORDS：

| N.O | 型号 PART NUMBER |          | 更改细节 REVISION DETAILS | 日期 DATE | 更改 REVISED BY | 审核 CONFORMED BY |
|-----|----------------|----------|-----------------------|---------|---------------|-----------------|
|     | 改前 BEFORE      | 改后 AFTER |                       |         |               |                 |
| 1   |                |          |                       |         |               |                 |
| 2   |                |          |                       |         |               |                 |
| 3   |                |          |                       |         |               |                 |
| 4   |                |          |                       |         |               |                 |
| 5   |                |          |                       |         |               |                 |