

## 0.2 英寸 红色 共阴 单位 数码管

### 特点 (Characteristics) :

\* 外观尺寸 (L/W/H) :10\*6.9\*3.0mm

Outline Dimensions (L / w / h): 10\*6.9\*3.0mm

\* 发光颜色:红色

Luminous color :Red

\*能在低电压、小电流条件下驱动发光

Lower working voltage and current

\*发光响应时间极短(<0.1  $\mu$ s),高频特性好,单色性好,亮度高

Lighting answering Time <0.1  $\mu$ s, better high frequency, chromaticity uniformity, high brightness.

\*体积小,重量轻,抗冲击性能好. 固态封装, 封装方式为灌胶型,稳定性高

Smaller volume, lighter weight, better impact resistance, solid sealing, good steady.

\*寿命长,使用寿命在5 万小时以上

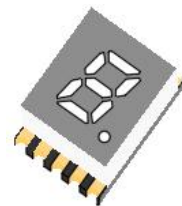
Long life for 50,000 hours.

\*可连续扫描驱动各字节

Keep scanning and driving every segment continuously.

\*良好的显示效果、视角宽

Good display effect and wide viewing angle



### 应用领域 (Product application) :

\* 家用电器 Household Electric Appliances;

\* 健康医疗 Health care;

\* 智能家居 Smart Home;

\* 蓝牙音响 Bluetooth audio;

\* 工业控制领域 Industrial control field;

\* 汽车仪表 automobile instrument;



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## 电性参数

## Electrical Characteristics

## 极限参数 (Ta=25°C) Absolute Maximum Rating (ta=25 °C)

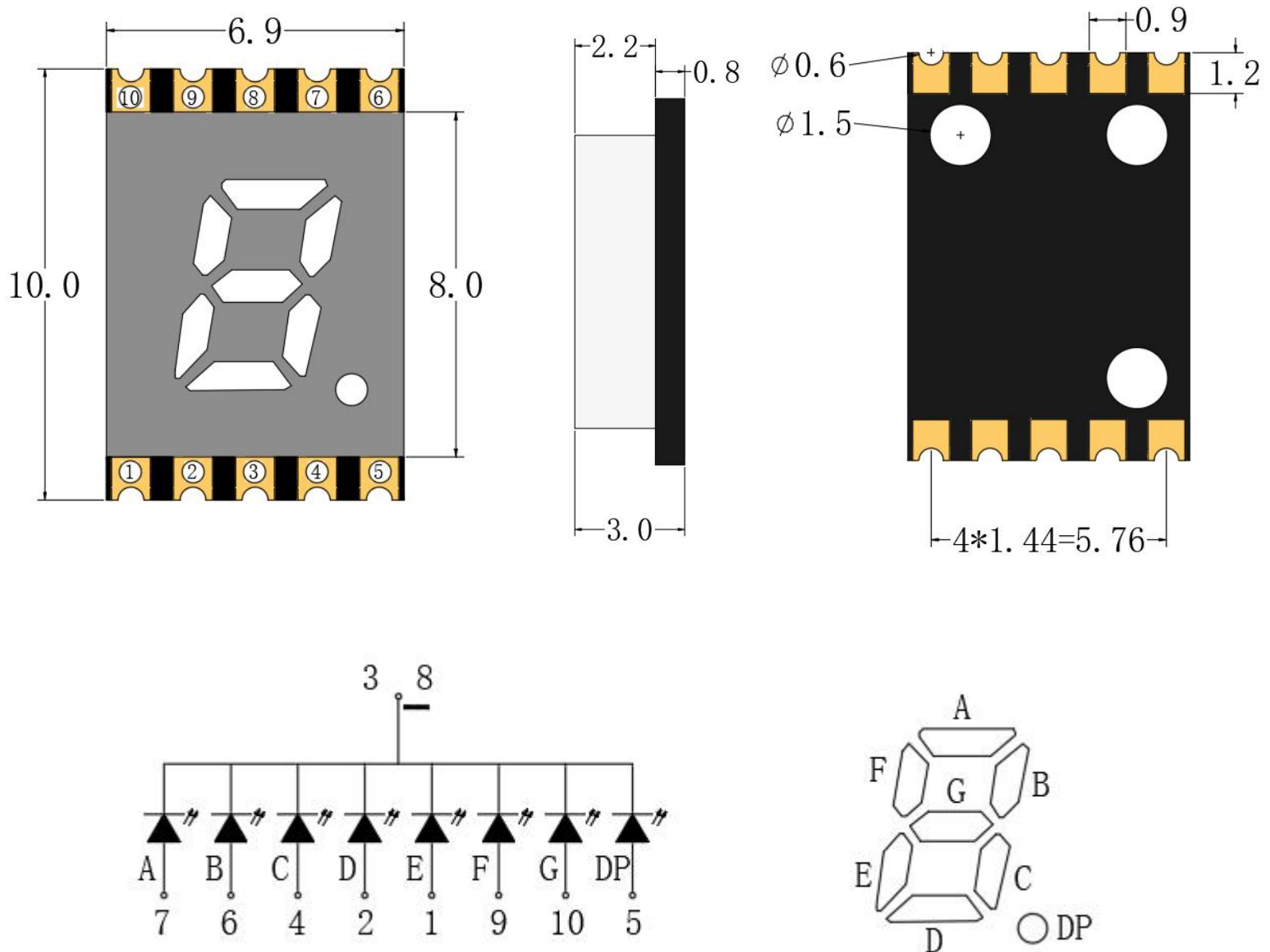
| 项目参数<br>Parameter                          | 符号<br>Symbol | 数值<br>Value                                                             | 单位 Unit |
|--------------------------------------------|--------------|-------------------------------------------------------------------------|---------|
| 功率 (Power)                                 | Pd           | 36                                                                      | mw      |
| 最大正向电流<br>(Max Continuous Forward Current) | IF           | 20                                                                      | mA      |
| 最大脉冲峰值电流<br>(Peak Forward Current)         | IFP          | 100                                                                     | mA      |
| 最大反向电压<br>(Max Reverse Voltage)            | VR           | 5                                                                       | V       |
| 工作环境<br>(Operating Temperature Range)      | TOPR         | -30 ~ +70°C                                                             | °C      |
| 储存温度<br>(Storage Temperature Range)        | TSTR         | -40 ~ +85°C                                                             | °C      |
| 焊接条件<br>(Welding conditions)               | Tsol         | 回流焊 (Reflow soldering) : 245°C, ≦6s<br>手动焊 (manual welding) : 300°C, 3s |         |

## 光电参数 (Ta=25°C) Optical-electrical parameter (ta=25 °C)

| 项目参数<br>Parameter            | 符号<br>Symbol    | 最小值<br>Min. | 一般值<br>Typ. | 最大值<br>Max. | 单位<br>Unit | 测试条件<br>Test conditions |
|------------------------------|-----------------|-------------|-------------|-------------|------------|-------------------------|
| 发光强度<br>(Luminous Intensity) | Iv              | /           | 100         | /           | mcd        | IF=20mA                 |
| 波长<br>(wavelength)           | nm              | /           | 620         | /           | nm         | IF=20mA                 |
| 正向电压<br>(Forward Voltage)    | VF              | 1.8         | /           | 2.4         | V          | IF=20mA                 |
| 半波宽<br>Half wave width       | $\Delta\lambda$ | /           | 20          | /           | nm         | IF=20mA                 |
| 反向电流<br>(Reverse Current)    | IR              | /           | /           | 20          | μA         | VR=5V                   |

外形尺寸及电路原理图：10mm×6.9mm×3.0mm

Figure Size & Circuit Principle Diagram : 10mm×6.9mm×3.0mm



管脚顺序：从数码管的正面观看，见图。

Pin sequence: viewed from the front of the digital tube, as shown in the figure

图中所有尺寸单位为 mm；未标注误差范围的尺寸误差范围为 $\pm 0.25$ mm。

All dimensions in the figure are in millimeters; The size error range without marked error range is  $\pm 0.25$ mm.

**数码管焊接条件:**

- 1、手工焊接温度: <300℃; 焊接时间:3s

Manual welding temperature:<2300 °C; Welding time: 3 seconds

- 2、浸锡、波峰焊预热温度: 100℃ (不超过 120℃, 升温平稳), 焊接温度: 235-245℃ (寻找最佳温度) , 焊接时间: <6s

Preheating temperature for tin immersion and wave soldering: 100 °C (not exceeding 120 °C, with stable heating), soldering temperature: 235-245 °C (search for optimal temperature), soldering time:<6s

- 3、超出以上条件, 数码管失效急剧上升

Exceeding the above conditions leads to a sharp increase in digital tube failure

**使用条件:**

- 1、使用时, 电流和电压必须正确; 段及小数点上加限流电阻;

When in use, the current and voltage must be correct; Add current limiting resistors to segments and decimal points;

- 2、产品不得在有腐蚀的气体下存储和使用, 并且曝露在空气下的时间不能太久, 否则会导致氧化;

The product should not be stored or used in corrosive gases, and should not be exposed to air for too long, otherwise it may cause oxidation;

- 3、所有接触数码的设备及仪器必须接地

All devices and instruments that come into contact with digital devices must be grounded

- 4、表面有保护膜的产品, 可以在使用前撕下来

Products with protective film on the surface can be peeled off before use

- 5、保护膜撕掉后, 不要用手触摸数码管表面

After removing the protective film, do not touch the surface of the digital tube with your hands

- 6、使用电压: 段: 根据发光颜色; 小数点: 根据发光颜色决定

Voltage used: segment: according to the color of the light emission; Decimal point: determined by the glowing color

- 7、使用电流: 动态平均电流 4-5mA 峰值电流 100mA

Current usage: Dynamic average current 4-5mA, peak current 100mA

- 8、蓝色、翠绿色、白色数码管在使用时请采取防静电措施

Please take anti-static measures when using blue, emerald green, and white digital tubes

- 9、推荐恒流使用, 恒压会出现亮度不均现象

Recommended for constant current use, as constant voltage may cause uneven brightness

### 贮存及运输:

- 1、数码管为电子产品应做好防潮工作；

Digital tubes should be moisture-proof for electronic products;

- 2、数码管为静电敏感器件，安装有静电敏感器件的印制电路板或整机储存时，也要采取防静电措施；

Digital tubes are electrostatic sensitive devices, and anti-static measures should also be taken when installing printed circuit boards or storing the entire machine with electrostatic sensitive devices;

- 3、运送或传递时，要尽量减少机械振动和冲击；在搬运时应轻拿轻放，堆放时不要堆放过高，也不要把过重的物品放在上面以免压坏 LED。

During transportation or transmission, mechanical vibration and impact should be minimized as much as possible; When handling, handle with care, do not stack too high, and do not place heavy items on top to avoid crushing the LED.