



厦 门 华 联 电 子 有 限 公 司

Xiamen Hualian Electronics Co., Ltd.

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# 产 品 规 格 书

## SPECIFICATION

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产品名称：红色超高亮发光二极管

DESCRIPTION: ULTRA BRIGHT RED LED

型号 MODEL: HFR3E5CP(R))

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## 1、特点 (FEATURES) :

- 驱动电流低, 发光强度高。 Low Drive Current, High Intensity of Light Emission.
- 快速响应时间, 可用脉冲驱动。 Fast Response Time, Pulse Driven.
- 环氧树脂无色透明封装。 Water Clear Plastic Molding.

## 2、极限参数 (ABSOLUTE MAXIMUM RATINGS) (Ta=25℃):

| 参数名称<br>PARAMETER                     | 符号<br>SYMBOL     | 额定值<br>RATING | 单位<br>UNIT |
|---------------------------------------|------------------|---------------|------------|
| 正向脉冲电流(1)<br>Forward Pulse Current    | I <sub>FBM</sub> | 50            | mA         |
| 正向电流<br>Forward Current               | I <sub>FM</sub>  | 20            | mA         |
| 反向电压<br>Reverse Voltage               | V <sub>R</sub>   | 5             | V          |
| 耗散功率<br>Power Dissipation             | P <sub>D</sub>   | 50            | mW         |
| 工作温度<br>Operating Temperature         | T <sub>opr</sub> | -20~+80       | ℃          |
| 贮存温度<br>Storage Temperature           | T <sub>stg</sub> | -30~+100      | ℃          |
| 焊接温度 (5 秒) (2)<br>Soldering Heat (5s) | T <sub>sol</sub> | 260           | ℃          |

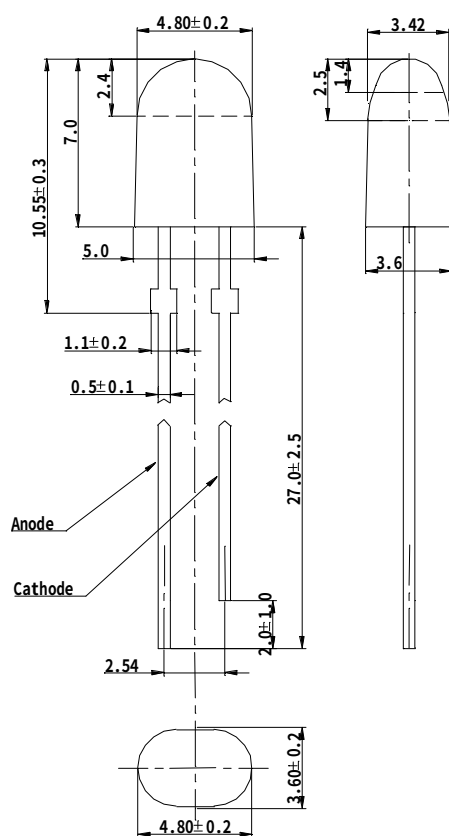
(1) 占空比 Duty: 1/10, 频率 Frequency: 1KHz

(2) 离器件本体 2 mm 以上 Up to 2 mm from the body.

## 3、光电参数 (OPTOELECTRIC CHARACTERISTICS) (Ta=25℃):

| 参数名称<br>PARAMETER           | 符号<br>SYMBOL       | 测试条件<br>TEST CONDITION |   | 最小值<br>MIN | 典型值<br>TYP | 最大值<br>MAX | 单位<br>UNIT |
|-----------------------------|--------------------|------------------------|---|------------|------------|------------|------------|
| 正向电压<br>Forward Voltage     | V <sub>F</sub>     | I <sub>F</sub> =20mA   |   |            | 1.75       | 2.5        | V          |
| 反向电流<br>Reverse Current     | I <sub>R</sub>     | V <sub>R</sub> =5V     |   | —          | —          | 10         | μ A        |
| 发光强度<br>Luminous Intensity  | I <sub>V</sub>     | I <sub>F</sub> =20mA   |   | 70         | 110        | —          | mcd        |
| 主波长<br>Dominate Wave Length | λ <sub>D</sub>     | I <sub>F</sub> =20mA   |   |            | 640        |            | nm         |
| 半强角度<br>Viewing Angle       | 2 θ <sub>1/2</sub> | I <sub>F</sub> =20mA   | X | —          | 35         | —          | °          |
|                             |                    |                        | Y | —          | 70         | —          | °          |

4、外形尺寸 (DIMENSION)

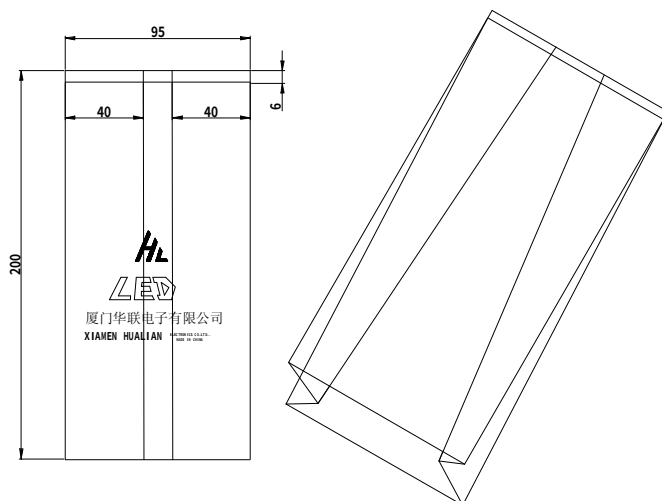


1. 正极 Anode
2. 负极 Cathode

## 6. 包装方式 Packing

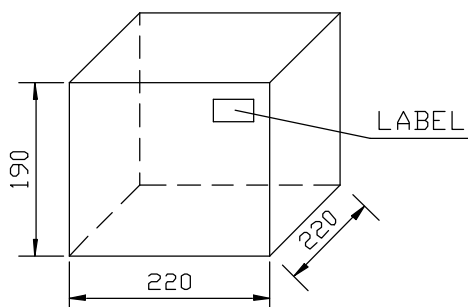
6.1 用  $95 \times 200 \text{mm}^2$  塑料袋内包装, 500 只/袋。

Internally packed with  $95 \times 200 \text{mm}^2$  plastic bags, 500pcs/bag.



6.2 外包装用纸盒( $220 \times 220 \times 190 \text{mm}^3$ ), 10000 只/盒。

Externally Packed with  $220 \times 220 \times 190 \text{mm}^3$  cartons, 10000 pcs/carton.



## 6.3 标识 Label

|                                                                                                                                              |                |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <br><b>Xiamen Hualian</b><br><b>Electronics Co., Ltd.</b> | P/N: _____     |
|                                                                                                                                              | Lot No.: _____ |
|                                                                                                                                              | Qty.: _____    |
|                                                                                                                                              | Insp.: _____   |

## 7. 注意事项 Precautions

### 7.1 引线成型 Forming

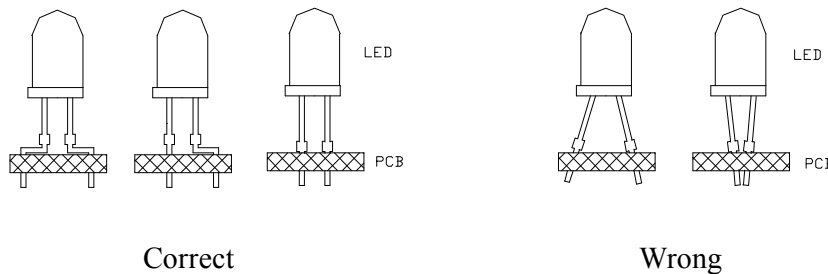
1) 引线成型需在焊接前完成。Leads should be formed before soldering.

- 2) 不能以引线基材为支点成型。Do not form the leads with their bases as a fulcrum.
- 3) 成型位置应离环氧本体 5mm 以上。Forming location should be up to 5mm from the epoxy body.

## 7.2 安装 Installation

LED 安装在 PCB 上，不能造成对引线施加压力。

Installation on PCB do not apply physical stress to the leads when mounting LED lamps on PCB.



## 7.3 焊接 Soldering

- 1) 环氧不可浸入锡槽内。Do not dip epoxy body into solder bath.
- 2) 加热过程中不能对引线施加压力。Do not apply stress to the leads while they are heated.
- 3) 使用电烙铁焊接时，电烙铁的功率应小于等于 30W，焊接时间应小于 3 秒。

When soldering LED, the solder iron power should be not more than 30W and with the soldering time not more than 3 seconds.

## 9.4 清洗 Cleaning

- 1) 在任何情况下，清洗时间应在常温 1 分钟之内进行。

In any case, the cleaning time should be 1 minute or less at a normal temperature.

- 2) 不可用水清洗，以免腐蚀引线，推荐使用酒精。

Do not clean LEDs with water as the remains may rust the leads. Alcohol is suggested to be used.

- 3) 用超声波清洗 LED 时，超声功率和时间应分别小于 300W 和 30 秒；PCB 和 LED 不能接触振荡器；不能使 PCB 上 LED 产生共振。

When LEDs are ultrasonic-washed, use the ultrasonic output power of less than 300W and the time of less than 30s; do not let the PCB and LEDs touch on the oscillator; do not resonate the LEDs attached on the PCB.

**8. 建议使用方式 Suggested way of usage.**

LED 使用时必须串联一个保护电阻，正向直流电流为 20mA 左右。

When using LED, it must use a protective resistor in series with DC current about 20 mA.