

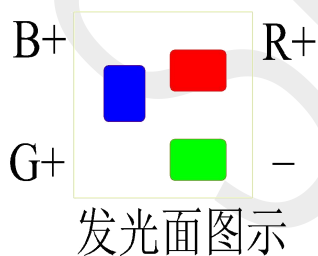
## XJ-MIP0202CC-E产品规格书

## 1. 产品特征 Product Features

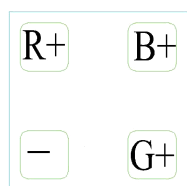
|             |                                        |
|-------------|----------------------------------------|
| MIP封装       | Micro LED in package type              |
| 超小尺寸和超薄封装设计 | Ultra small size & thin package design |
| 包装：蓝膜形式     | Package: Blue tapes                    |
| 固晶作业        | Die Bonding Operation                  |
| 符合RoHS      | RoHS Compliant                         |
| 室内显示应用      | Indoor Display                         |

## 2. 产品尺寸及材料 Package Dimensions &amp; Material Structure

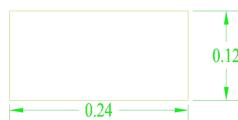
| Description               | Dimensions                                  |
|---------------------------|---------------------------------------------|
| 产品尺寸<br>Package Size      | 9.6 mil×9.6 mil<br>(240±30) μm ×(240±30) μm |
| 产品厚度<br>Package Thickness | 4.8 mil<br>(120±20) μm                      |
| 电极尺寸<br>N/P-Pad Size      | 2.4 mil×2.4 mil<br>(60±10) μm × (60±10) μm  |
| 电极材质<br>N/P-Pad Metal     | Au Alloy                                    |



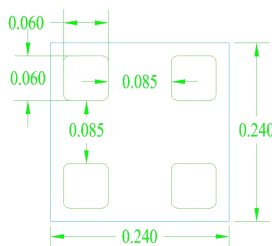
发光面图示



焊盘面图示

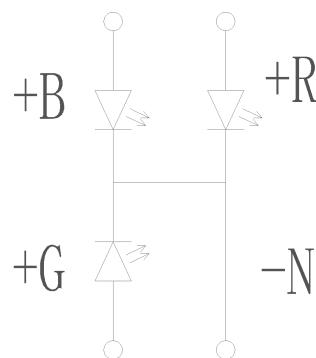


侧面图示



尺寸图示

单位: mm



电路图

## 3. 电性参数 Electro Characteristics

## 极限参数 Absolute Maximum Ratings (Temperature=25℃)

| 参数<br>Parameter               | 符号<br>Symbol | 极限<br>Absolute Maximum Ratings | 单位<br>Unit |
|-------------------------------|--------------|--------------------------------|------------|
| 正向电流<br>Forward Current       | If           | 3                              | mA         |
| 反向电压<br>Reverse Voltage       | Vr           | 5                              | V          |
| 工作温度<br>Operating Temperature | To           | -10~60                         | ℃          |
| 贮存温度<br>Storage Temperature   | Ts           | 5~40                           | ℃          |

## 光电参数 Electro-Optical Characteristics (Temperature=25℃)

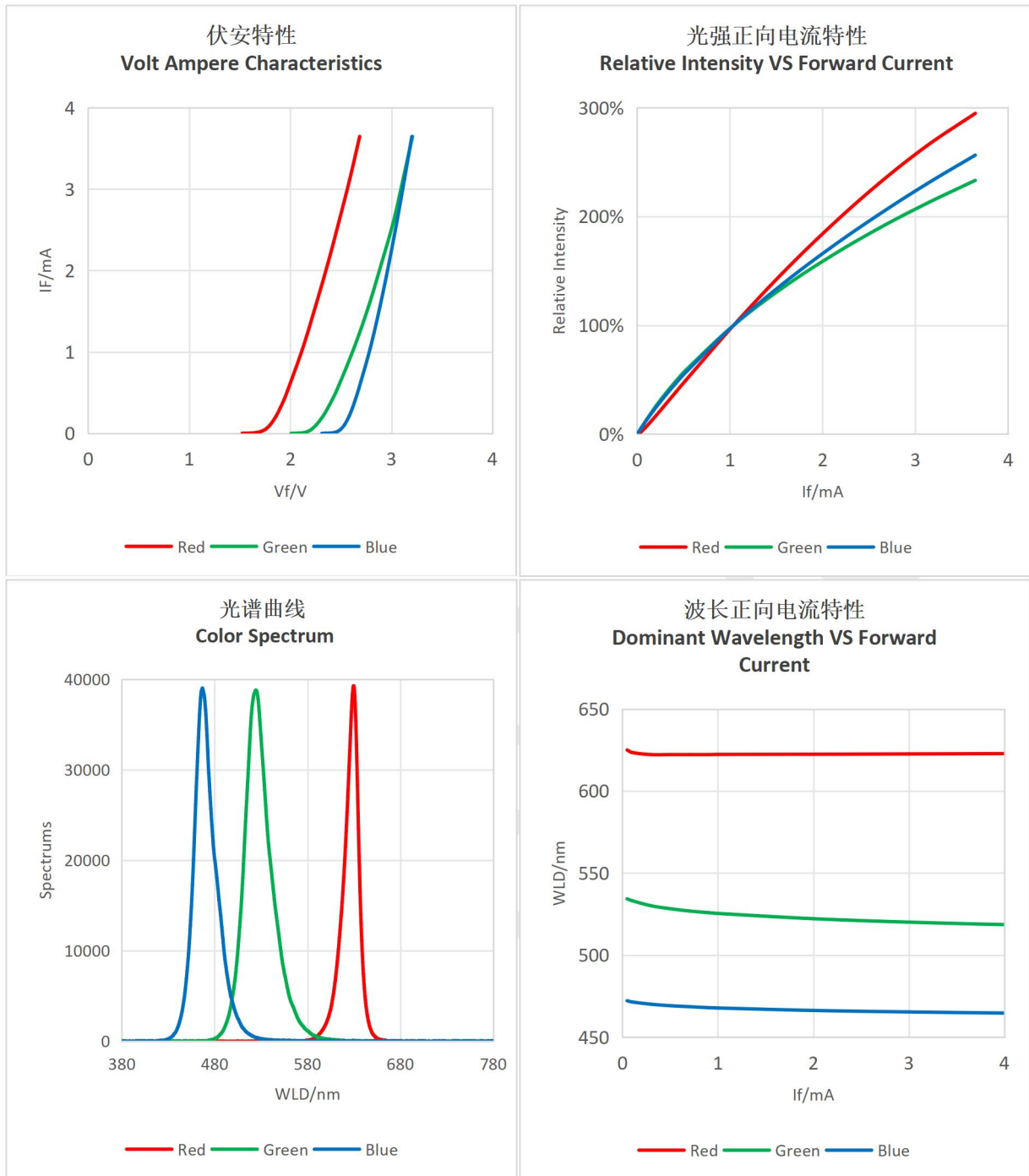
| 参数<br>Parameter                | 符号<br>Symbol | 测试条件<br>Condition | 颜色<br>Color | 参数<br>Value |             |            | 单位<br>Unit |
|--------------------------------|--------------|-------------------|-------------|-------------|-------------|------------|------------|
|                                |              |                   |             | 最小值<br>Min  | 典型值<br>Type | 最大值<br>Max |            |
| 正向电压<br>Forward Voltage        | Vf           | If=1.2mA          | R           | 1.8         | /           | 2.3        | V          |
|                                |              | If=1mA            | G           | 2.4         | /           | 3          |            |
|                                |              | If=1mA            | B           | 2.6         | /           | 3.2        |            |
| 主波长<br>Dominant Wavelength     | WLD          | If=1.2mA          | R           | 618         | /           | 626        | nm         |
|                                |              | If=1mA            | G           | 525         | /           | 540        |            |
|                                |              | If=1mA            | B           | 464         | /           | 478        |            |
| 发光强度<br>Luminous Intensity     | Iv           | If=1.2mA          | R           | 10          | /           | 20         | mcd        |
|                                |              | If=1mA            | G           | 28          | /           | 50         |            |
|                                |              | If=1mA            | B           | 6           | /           | 15         |            |
| 半波宽<br>Full Width Half Maximum | FWHM         | If=1.2mA          | R           | /           | 16          | /          | nm         |
|                                |              | If=1mA            | G           | /           | 28          | /          |            |
|                                |              | If=1mA            | B           | /           | 20          | /          |            |
| 反向漏电流<br>Reverse Current       | Ir           | Vr=-5V            | R           | /           | /           | 0.2        | μA         |
|                                |              | Vr=-5V            | G           | /           | /           | 0.2        |            |
|                                |              | Vr=-5V            | B           | /           | /           | 0.2        |            |

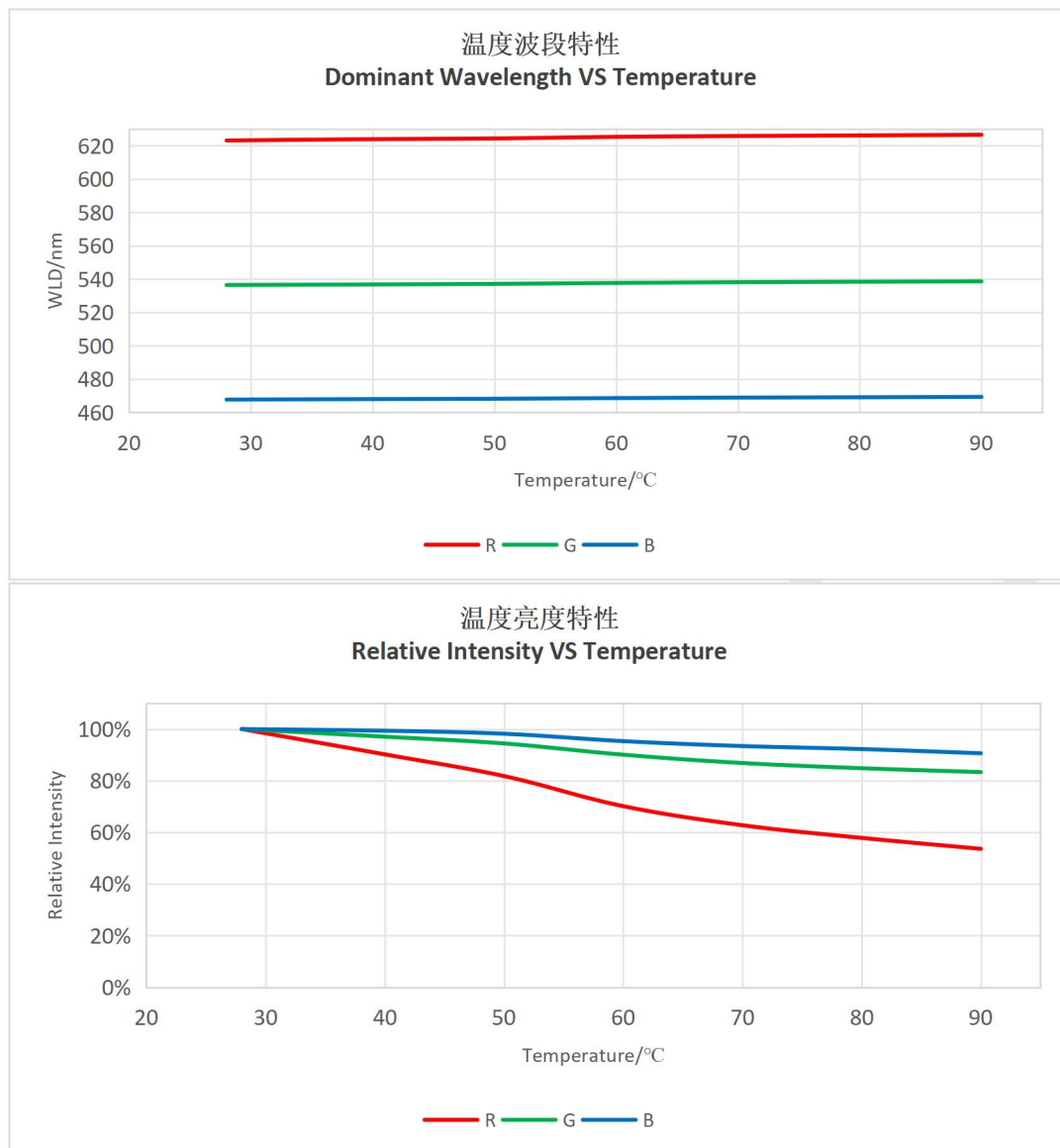
说明：1. 以上数据基于芯聚半导体测试机上测试。

2. 光强测量误差±10%。

3. 主波长测量误差±0.5nm。

## 4. 典型特性曲线 Typical Characteristics Curves





## 5. 可靠性测试 Reliability Test

| 实验项目<br>Item                                         | 实验条件<br>Test Condition          | 时间/次数<br>Time/cycle | 数量<br>Quantity | 允收标准<br>LTPD |
|------------------------------------------------------|---------------------------------|---------------------|----------------|--------------|
| 冷热冲击<br>Temperature Shock                            | -40°C (15min)~<br>100°C (15min) | 100cycles           | 100            | 0/100        |
| 高温高湿<br>High Temp. and<br>High Humidity<br>Operation | 85°C & 85%RH                    | 1000hrs             | 100            | 0/100        |

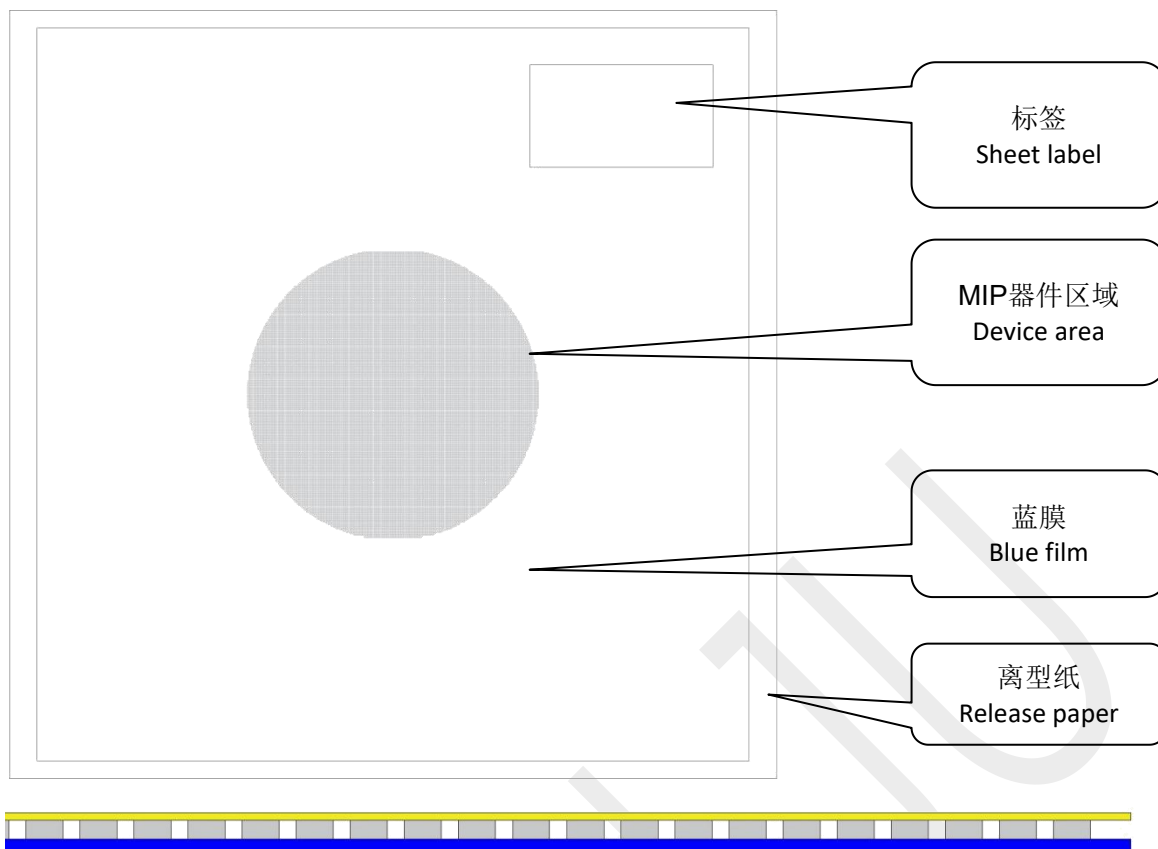
|                                   |                           |         |     |       |
|-----------------------------------|---------------------------|---------|-----|-------|
| 回流焊<br>Reflow                     | Tsol=230℃ 60s             | 3cycles | 100 | 0/100 |
| 高温贮存<br>High Temp Store           | 100℃                      | 1000hrs | 100 | 0/100 |
| 低温贮存<br>Low Temp. Store           | -40℃                      | 1000hrs | 100 | 0/100 |
| 常温脉冲工作<br>Room Temp.<br>Operation | 25℃<br>If=1mA<br>Duty=10% | 1000hrs | 20  | 0/100 |
| 高温脉冲工作<br>Room Temp.<br>Operation | 55℃<br>If=1mA<br>Duty=10% | 1000hrs | 20  | 0/100 |

### 寿命试验合格判断标准 Criteria For Passing Qualification Of Lifespan Test

| 测试项目<br>Test Items | 符号<br>Symbol | 测试条件<br>Test Condition | 判断标准<br>Criteria for Judgment |
|--------------------|--------------|------------------------|-------------------------------|
| 正向电压               | Vf           | 1mA                    | 初始值±10%                       |
| 反向漏电流              | Ir           | Vr=-5V                 | <1μA                          |
| 光功率                | LOP          | 1mA                    | 平均LOP衰减≤30%                   |

## 6. 包装Packaging

蓝膜方式：Blue film。



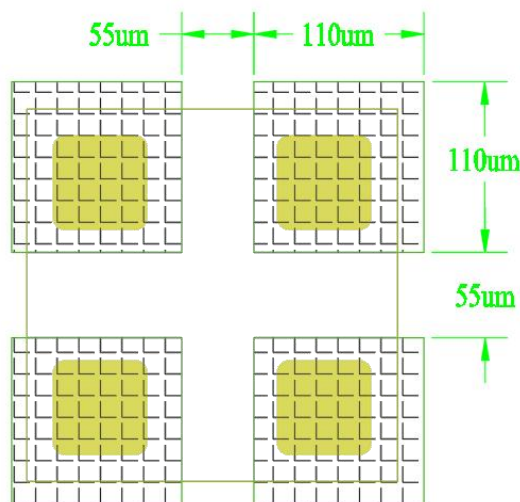
说明：MIP器件排布在蓝膜中央，电极贴在蓝膜上，蓝宝石面接触离型纸。

The MIP devices are placed on the center of the blue film, and the PADs are faced to the blue film, sapphire substrates are attached to release paper.

## 7. 焊接指导 Reflow Soldering Characteristics

焊盘设计建议 Pad design suggestions.

焊盘建议尺寸如下图。The recommended pad sizes are shown in the figure below.



### 回流条件建议 Suggestions for reflow conditions.

推荐使用无铅锡膏焊接，例如SAC305锡膏。

回流焊接最多只能进行两次。

在焊接完成后，待产品温度下降到室温之后，再进行其他处理。

Use the Pb-Free reflow soldering, such as SAC305 solder paste.

Reflow soldering should not be done more than two times.

After soldering, do not deal with the product before its temperature cooling down to room temperature.

## 8. 使用注意事项 Precautions for Use

### 静电防护 ESD protection

静电和电涌会导致产品特性发生改变，如果情况严重甚至会损毁产品。在使用时必须采取有效的防静电措施。

所有相关的设备和机器都应该正确接地，同时必须采取其他防止静电和电涌的措施。使用防静电手环，防静电垫子，防静电工作服、工作鞋、手套，防静电容器，都是有效的防止静电和电涌的措施。

Static electricity and power surges can cause changes in product characteristics and even damage the product in severe cases. Therefore, effective anti-static measures must be taken when using.

All relevant equipment and machinery should be properly grounded, and other measures must be taken to prevent static electricity and power surges. The use of anti-static wristbands, anti-static MATS, anti-static clothes, work shoes, gloves, anti-static containers, are effective measures to prevent static electricity and power surges.

#### **贮存条件 Storage conditions**

建议储存温度控制在  $20\pm5^{\circ}\text{C}$ ，湿度控制在  $50\pm25\%$  以内。

It is recommended that the storage temperature be controlled at  $20\pm5^{\circ}\text{C}$  and the humidity be controlled within  $50\pm25\%$ .

#### **固晶作业 DB operation**

固晶作业中，注意调节顶针高度、吸嘴压力，控制施加在器件上的力度，避免损伤器件。

During the DB operation, pay attention to adjust the height of the needle and the pressure of the nozzle, and control the force applied on the device to avoid damage to the device.