



连云港美华电子科技有限公司  
Lianyungang Meihua Electronics Technology Co.,Ltd

# 产品规格书

## DATA SHEET

Part No: MHT130ZVRCT  
REV.3

本产品符合 ROHS 指令有关限制有害物质的环保要求.

日期 DATE	拟制 PREPARED	审核 VERIFIED	批准 APPROVED
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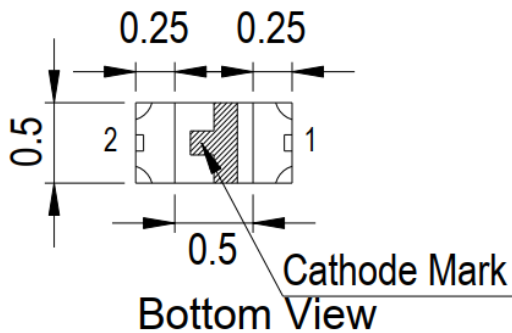
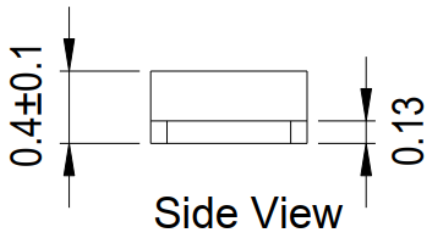
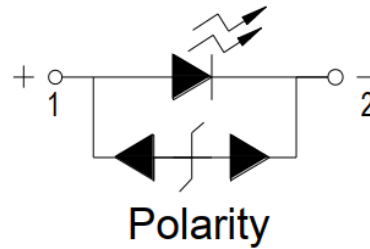
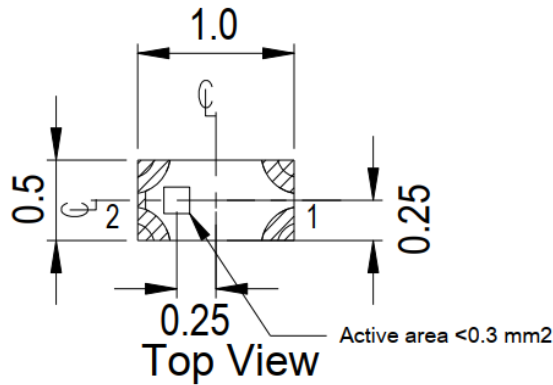


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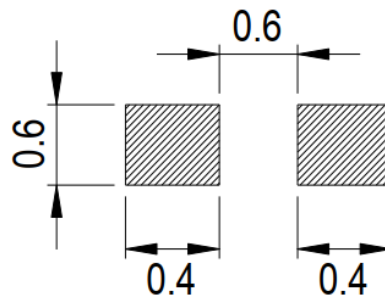
P/N: MHT130ZVRCT

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### 产品外观尺寸 PACKAGE DIMENSIONS



### Recommended Solder Pad



### 注意 NOTES :

1. 所有尺寸均为 mm(英寸)

All dimensions are in millimeters. (inches)

2. 如无特殊说明, 公差为 0.10mm(0.004")

Tolerance is  $\pm 0.10\text{mm}(0.004\text{'})$  unless otherwise specified.



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P/N: MHT130ZVRCT

LED SMD

## 产品特性 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
- 窄视角  
Narrow viewing angle
- 符合 RoHS 指令要求  
ROHS COMPLIANT
- 无铅产品  
Pb FREE PRODUCTS
- VCSEL 脉冲激光器  
VCSEL pulsed laser
- 与红外和气相回流焊工艺兼容  
Compatible with infrared and vapor phase reflow solder process

## 产品特征 Description

- 0402 规格封装  
0402 package
- 顶部发光  
Top view LED
- 胶体颜色: 透明  
Lens Color: Water Clear
- 发光颜色 Emitted color:
  1. 红外: Infrared
  - 2.
  - 3.
  - 4.
  - 5.
- 晶片材质 Chips materials:
  1. GaAs
  - 2.
  - 3.
  - 4.



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P/N: MHT130ZVRCT

LED SMD

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

参数 Parameter	符号 Symbol	极限值 Rating	单位 Unit
功耗 Power Dissipation	PAD	60	mW
最大峰值电流 Peak Forward Current Per Segment (Pulse Width $\leq 100 \mu s$ , Duty $\leq 1\%$ )	IFP	60	mA
正向使用电流 Continuous Forward Current	IF	25	mA
反向电压 Reverse Voltage	VR	5	V
Electrostatic Discharge Threshold(HBM)	ESD	2000	V
工作温度 Operating Temperature Range	TOPR	-40°C to +85°C	
储藏温度 Storage Temperature Range	TSTG	-40°C to +100°C	

### 光电特性 Optical-Electrical Characteristic(Ta=25°C)

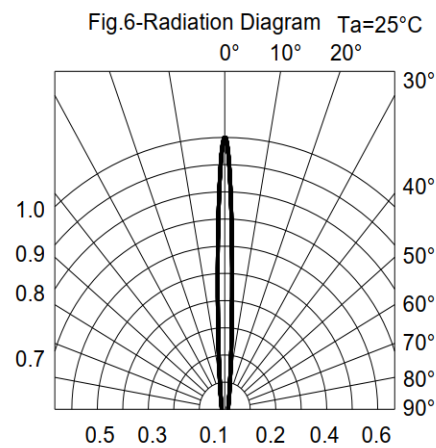
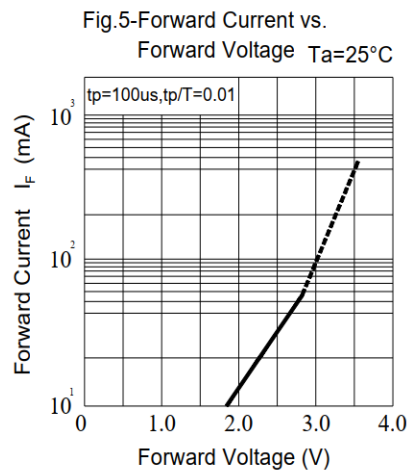
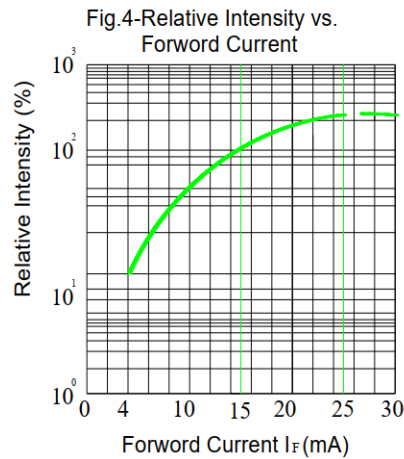
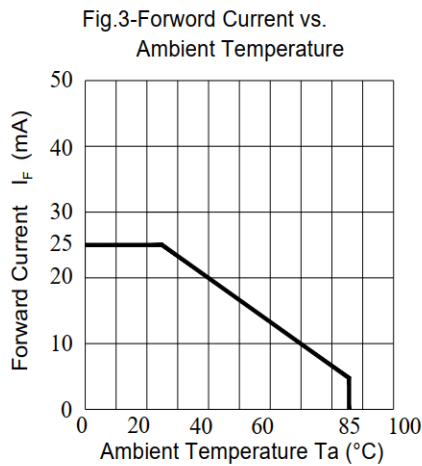
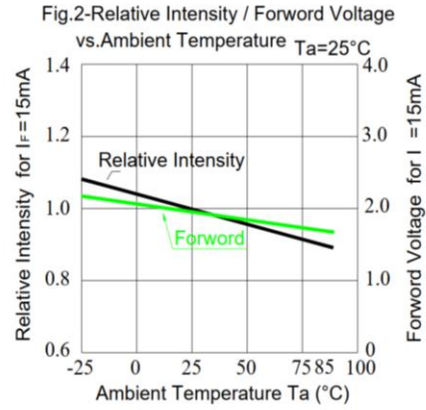
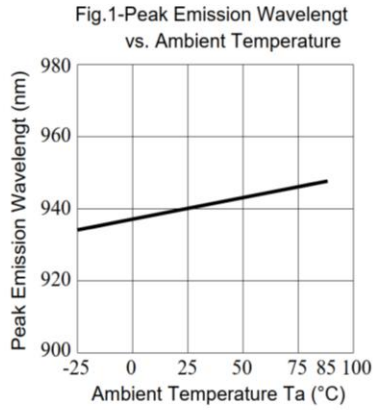
符号 Symbol	参数 Parameter	测试条件 Test Condition	最小 Min	标准 Typ	最大 Max	单位 Unit
VF	正向压降 Forward Voltage	IF = 15mA	1.8	-	2.4	V
IR	反向漏电流 Reverse Current	VR=5V	-	-	10	uA
$\lambda_p$	峰值波长 Peak Wavelength	IF = 15mA	930	-	950	nm
$\Delta \lambda$	光谱辐射带宽 Spectrum Radiation Bandwidth	IF = 15mA	-	-	$\pm 5$	nm
2 $\theta$ 1/2	发光角度 Viewing Angle	IF = 15mA	-	12	18	deg
Po	输出功率 (连续波) Output power (continuous wave)	IF=15mA	8	13	16	mW
		IF=8mA	4	6.5	8	

#### Notes:

1. 正向压降公差为 $\pm 0.1V$ 。Tolerance of Forward Voltage :  $\pm 0.1V$ .



### 光电特性图 Typical Electrical Characteristic Curves(Ta=25°C)



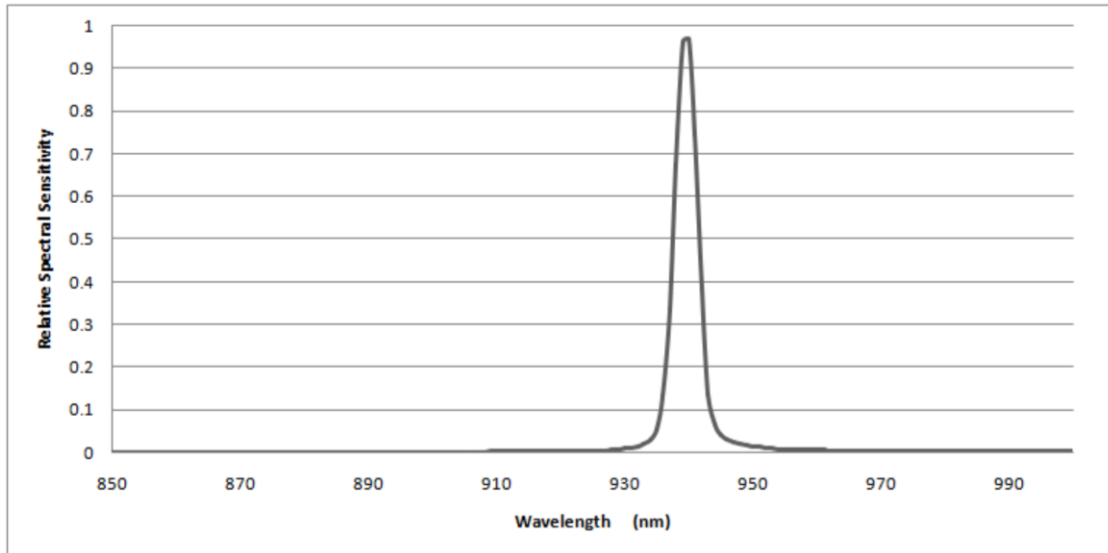


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P/N: MHT130ZVRCT

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### 光谱分布图 Spectrum Distribution



### 电压等级 Bin Range of Forward Voltage(VF)

等级 Bin Code	最小值 Min	最大值 Max	单位 Unit	条件 Condition
25	1.8	1.9	V	@15mA
26	1.9	2.0	V	@15mA
27	2.0	2.1	V	@15mA
28	2.1	2.2	V	@15mA
29	2.2	2.3	V	@15mA
30	2.3	2.4	V	@15mA

Note:

电压公差范围:  $\pm 0.1V$ 。Tolerance of Forward Voltage:  $\pm 0.1V$ .



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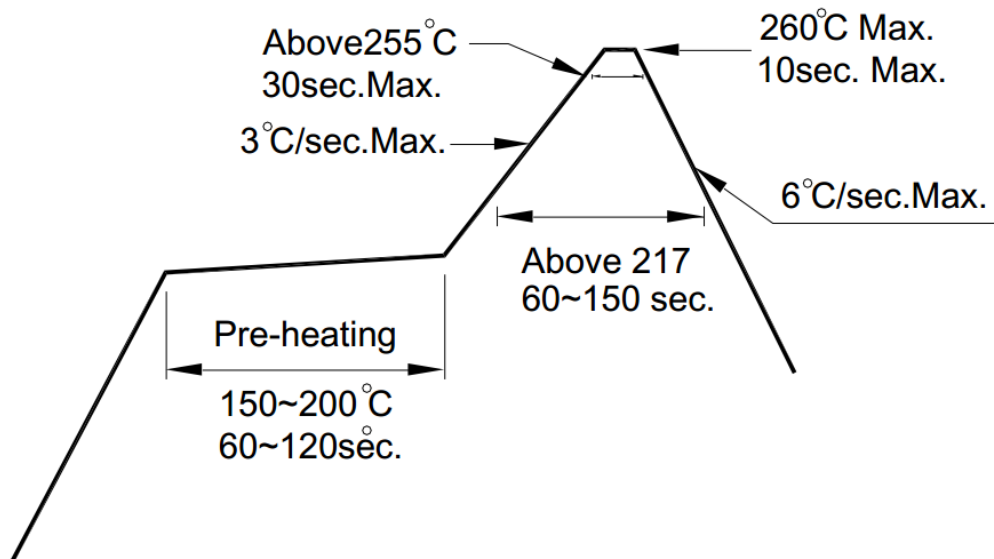
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LED SMD

### 焊接条件 Soldering Condition

方法 METHOD	焊接条件 SOLDERING CONDITIONS	备注 REMARK
回流焊 Reflow Soldering	260°C for 10 sec/1 time.	
烙铁焊 Soldering Iron	350°C for 3 sec/1 time.	使用 25W 以下功率的电烙铁 the soldering iron capacity 25W

### 无铅制程炉温曲线 Pb-free solder temperature profile



#### Notes:

- 过回流焊次数不可超过 2 次。  
Reflow soldering should not be done more than two times.
- 焊接加热过程中不要挤压 LED  
When soldering, do not put stress on the LEDs during heating.
- 不应在焊接发光二极管后弯曲 PCB 板  
After soldering, do not warp the circuit board
- 客户在设计使用时需串联保护电阻，避免电压波动烧毁发光二极管。  
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen)



连云港美华电子科技有限公司

P/N: MHT130ZVRCT

LED SMD

### 储藏 STORAGE

1. 发光二极管在出厂后可在温度 30 度以下,湿度 90% 以下的环境内保存 1 年。The LED should be stored at 30°C or less and 70% RH or less after being shipped from MH and the storage life limits are 1 year.
2. 在产品准备使用前请不要打开防潮袋。Do not open moisture proof bag before the products are ready to use.
3. 打开包装后: 产品暴露在温度 30 度以下湿度 60% 以下的 24 小时内用完, 若仍然有剩余, 请一定要放到防潮柜内储存。After opening the package: The LED's floor life is 24 hours under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
4. 如果吸湿性材料(硅胶)已用完或发光二极管已超过存储时间, 应使用以下条件进行烘烤处理, 处理: 60±5°C 烘烤 4 小时。If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5°C for 4 hours.
3. 请避免保存在温度变化明显, 尤其是高湿度的地方 Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

### 使用注意事项 Application Restrictions

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P/N: MHT130ZVRCT

LED SMD

**4. 静电放电（静电放电）ESD (Electrostatic Discharge)**

产品敏感的静电或冲击电压。当使用产品时静电放电会损坏模具及其可靠性。对静电放电的措施强烈推荐：**The products are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measures against electrostatic discharge are strongly recommended:**

消除电荷 **Eliminating the charge**

接地的手环，防静电鞋，衣服和地板 **Grounded wrist strap, ESD footwear, clothes, and floors**

接地的工作站设备和工具 **Grounded workstation equipment and tools**

导电材料的防静电工作台/架子 **ESD table/shelf mat made of conductive materials**

正确的接地用于所有装置、设备和机器生产过程所必须。在产品设计时应考虑冲击保护。**Proper grounding is required for all devices, equipment, and machinery used in product assembly. Surge protection should be considered when designing of commercial products.**

如果工具或设备含有绝缘如玻璃或塑料材料，需要做下列静电放电预防措施：**If tools or equipment contain insulating materials such as glass or plastic, the following measures against electrostatic discharge are strongly recommended:**

用导电材料耗散静电电荷 **Dissipating static charge with conductive materials**

保持环境的湿度 **Preventing charge generation with moisture**

使用离子风扇中和静电 **Neutralizing the charge with ionizers**

**5. 发光二极管正向电流方向使用，驱动电路的设计必须使 LED 在关闭的状态下不经受正向或逆向电压，如果反向电压不断应用于发光二极管，它可以导致 LED 损坏。The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage.**