



佛山市国星光电股份有限公司
FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD

产品规格书 SPECIFICATION

| | | | |
|-----------------------|--|-------------------|---------------|
| 顾客名称 Customer | | 产品名称 Product | Chip LED |
| 顾客型号 Customer Type | | 产品型号 Type | FC-3010IK-940 |
| 顾客部品号 Customer No. | | 版本号 Version NO | B 版 |



| | | | |
|---------------------------------------|-------------|---------------|-------------------------------|
| 研发中心 Research & Development Center | | | 客户 (加盖公章) Customer (Stamp) |
| 制定 DRAW | 审核 CHECK | 批准 APPROVE | 确认 CONFIRM |
| | | | |
| 发放日期 (Release Date): 2016-11-25 | | | |

FC-3010IK-940

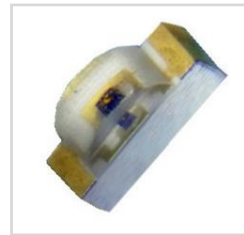
技术数据表 Technical Data Sheet

本产品主要将电能直接转换成近红外光（不可见光）并能辐射出去的发光器件，主要应用于各种光电开关及遥控发射电路中。

The product is mainly to convert electrical energy directly to near-infrared light (not visible) ,and radiation out of the light-emitting device, mainly used in all kinds of photoelectric switch ,and remote transmission circuit.

- 特性:**
- 管芯材料: AlGaAs
Material:
 - 封装材料: 环氧树脂
Encapsulation: Epoxy Resin
 - 焊接方法: 无铅回流焊
Soldering methods: Pb-Free reflow soldering
 - 功耗低, 可靠性好, 寿命长
Low Power Dissipation, Good Reliability and Long Lifespan
 - 符合欧盟公布的 ROHS 指令要求
Complied With ROHS Directive
- Features:**

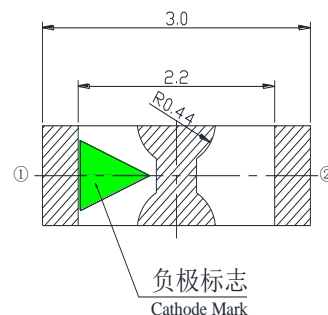
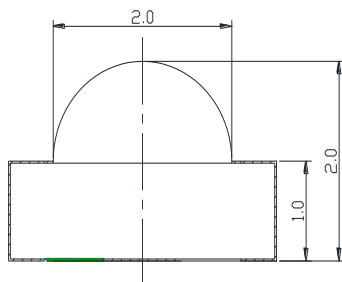
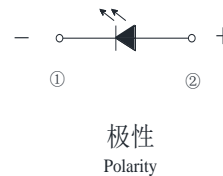
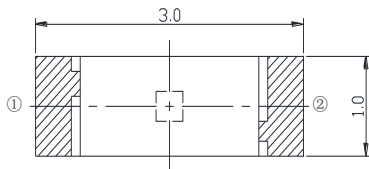
红外发射管
Infrared LED



* 产品规格如因工艺改进而有所改变, 恕不另行通知。
* The specifications of the product may be modified for improvement without notice.

外形尺寸

Outline Dimension



敷铜区域: Cuprum Area:
阻焊丝印区域: Solder Resist:
无特别规定时, 公差: X.X±0.1, X.XX±0.05, 单位为mm
* The Tolerances Unless Mentioned is : X.X±0.1, X.XX±0.05, Unit= mm*

光电参数

Electro-Optical Characteristics

◇ 极限参数 (温度=25℃)
Absolute Maximum Ratings (Temperature=25 °C)

| 参数名称 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|-----------------------------------|------------------|--------------|------------|
| 正向电流 Forward Current | I _F | 50 | mA |
| 正向脉冲电流* Pulse Forward Current* | I _{FP} | 50 | mA |
| 反向电压 Reverse Voltage | V _R | 5 | V |
| 工作温度 Operating Temperature | T _{OPR} | -30 ~ +85 | °C |
| 贮存温度 Storage Temperature | T _{stg} | -40 ~ +100 | °C |
| 功耗 Power Dissipation | P _D | 75 | mW |

* 注: 脉冲宽度≤0.1ms, 占空比≤1/10 * Note: Pulse Width≤0.1ms, Duty≤1/10

◇ 光电参数 (温度=25℃)
Electro-Optical Characteristics (Temperature=25 °C)

| 参数名称 Parameter | 符号 Symbol | 条件 Condition | 最小值 Min. | 典型值 Typ. | 最大值 Max. | 单位 Unit |
|--------------------------------------|-------------------|----------------------|-------------|-------------|-------------|------------|
| 反向电流 Reverse Current | I _R | V _R =5V | - | - | 10 | μA |
| 视角 View Angle | 2θ _{1/2} | - | - | 150 | - | deg. |
| 正向电压 Forward Voltage | V _F | I _F =20mA | - | 1.2 | 1.5 | V |
| 峰值波长 Peak Wavelength | λ _P | | - | 940 | - | nm |
| 半波宽度 Spectrum Radiation Bandwidth | Δλ | | - | 50 | - | nm |
| 辐射强度 Radiant Intensity | I _e | | 0.5 | 0.8 | - | mW/sr |

* 注 1: 辐射强度偏差±15%; 压降偏差±0.1V; (X,Y)坐标偏差±0.01; 单色光波长偏差±1nm。

* Note1: Tolerance on each Radiant Intensity bin is ±15%; Tolerance on each Forward Voltage bin is ±0.1V; Tolerance on each Hue(X,Y) bin is ±0.01; Tolerance of Dominant Wavelength ±1nm.

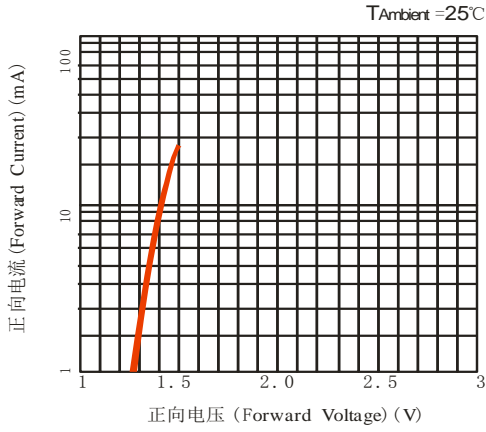
* 注 2: 以上参数仅供参考, 请以实物标签为准。我司给出的参数均由国星测试系统测得。

* Note2: The parameters above are only for your reference. In case of any discrepancy, please adhere to the label of our actual products. All parameters are tested by the standard testing system of NationStar.

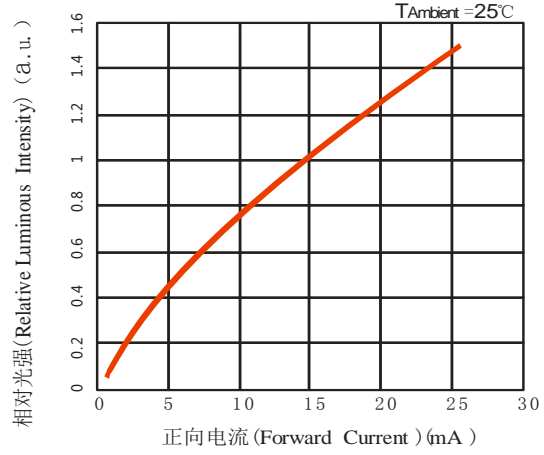
典型特性曲线

Typical Characteristics Curves

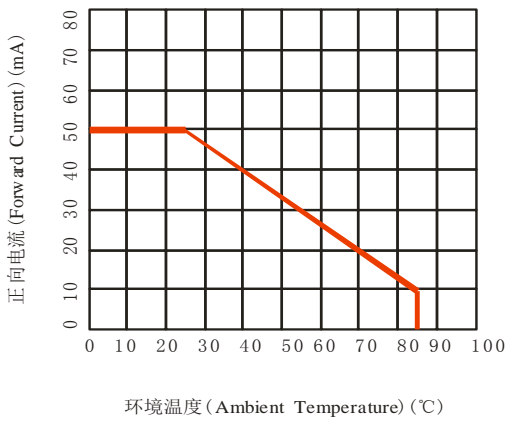
伏安特性
Volt-Ampere Characteristics



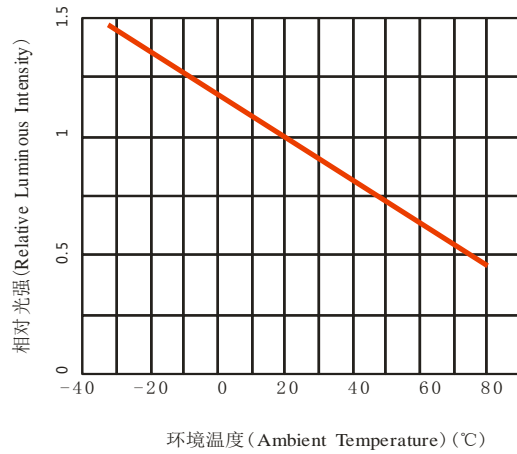
相对光强与正向电流特性
Relative Luminous Intensity VS Forward Current



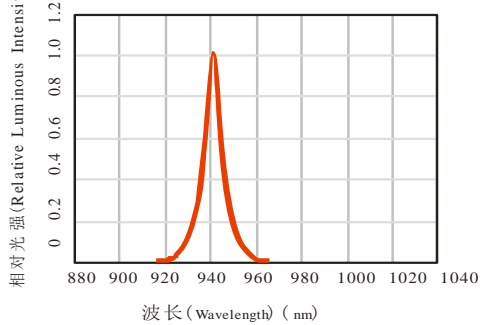
正向电流降额曲线
Forward Current Derating Curve



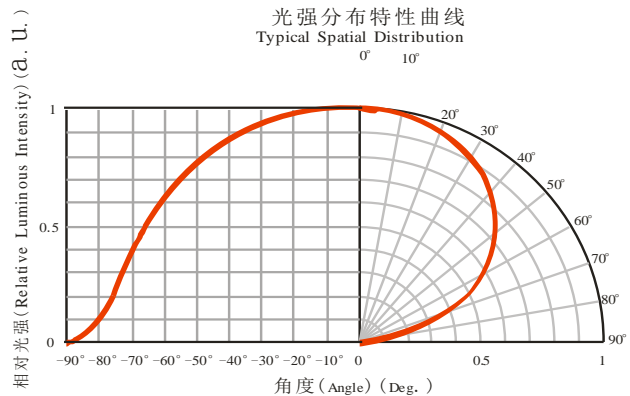
光强与环境温度曲线
Luminous Intensity VS Ambient Temperature



光谱分布特性曲线
Relative Spectral Distribution



光强分布特性曲线
Typical Spatial Distribution





可靠性试验

Reliability Test Items And Conditions

| 实验项目 Test Items | 参考标准 Reference | 实验条件 Test Conditions | 时间 Time | 样品数 Quantity | 判据 Criterion |
|--|---------------------------|---|------------------------|-----------------|-----------------|
| 冷热冲击 Thermal Shock | MIL-STD-202G | -40°C(15min)←→100°C(15min) | 循环 200 次 200 cycles | 22 | 0/22 |
| 湿热循环 Temperature And Humidity Cyclic | JEITA ED-4701 200 203 | (-10~65)°C , (0~90)%RH 24hrs./1cycle | 循环 10 次 10 cycles | 22 | 0/22 |
| 高温储存 High Temperature Storage | JEITA ED-4701 200 201 | Ta=100°C | 1000h | 22 | 0/22 |
| 低温储存 Low Temperature Storage | JEITA ED-4701 200 202 | Ta=-40°C | 1000h | 22 | 0/22 |
| 常温寿命试验 Lifespan Test | JESD22-A108D | Ta=25°C IF=10mA | 1000h | 22 | 0/22 |
| 耐焊接热 Resistance to Soldering Heat | GB/T 4937, II ,2.2&2.3 | Tsol*=(260±5)°C 10secs. | 2 次 2 times | 22 | 0/22 |

失效判断标准 Criteria For Judging Damage

| 测试项目 Test Items | 符号 Symbol | 测试条件 Test Conditions | 判定标准 Criteria For Judging Damage |
|--------------------------------------|----------------|----------------------------------|--|
| 正向电压 Forward Voltage | V _F | I _F = I _{FT} | 初始值 ±10% Initial Data ±10% |
| 反向电流 Reverse Current | I _R | V _R = 5V | I _R ≤10μA |
| 辐射强度 Radiant Intensity | I _e | I _F = I _{FT} | 平均 I _e 衰减 ≤30%, 单个 I _e 衰减 ≤50% Average I _e degradation ≤30%; Single LED I _e degradation ≤50% |
| 耐焊接热 Resistance to Soldering Heat | | | 材料无内部裂痕、无材料间爆裂、剥离、无死灯。 Material without internal cracks, no material between stripped, no dead light . |

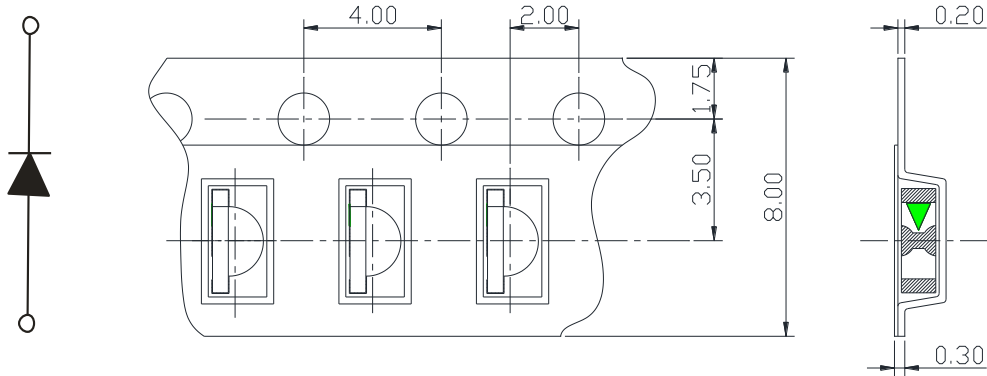
* 注: T_{sol}-锡液温度; I_{FT}: 典型电流

* Note: T_{sol}-Temperature of tin liquid; I_{FT}: Typical current.

包装 (1)

Packaging (1)

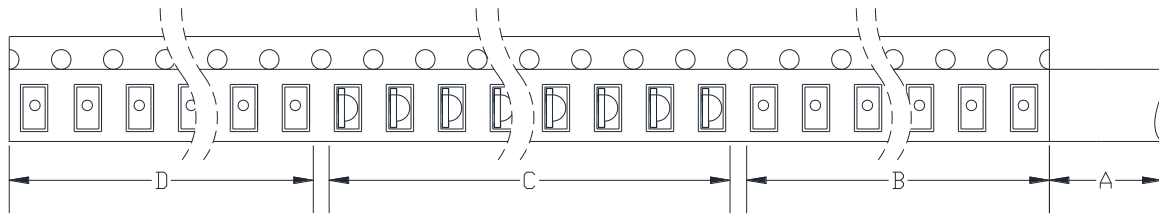
◇ 载带 Carrier Tape



单位: mm, 未注公差: ± 0.1 mm
All dimensions in mm, tolerances unless mentioned is ± 0.1 mm.

◇ 编带细节 Details Of Carrier Tape

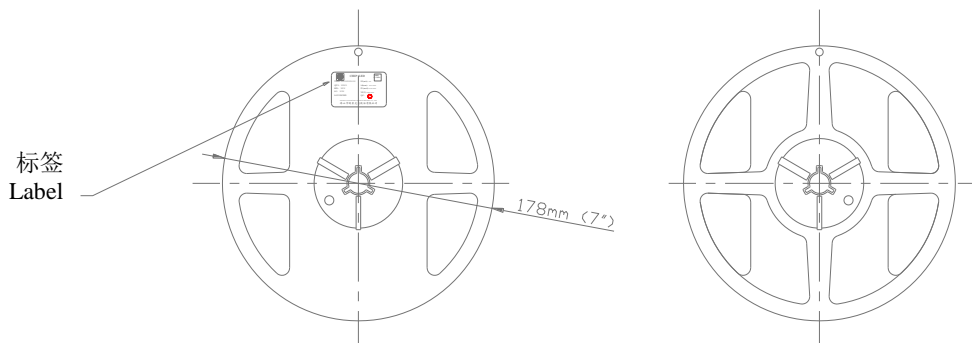
前进方向 Progressive Direction \longrightarrow



A: 盖带, 200 mm; B: 引导, 空带, 100mm; C: 编载产品 3000 只; D: 尾部, 空带, 100mm
A: Top Cover Tape, 200mm; B: Leader, Empty, 100mm; C: 3000 Lamps Loaded; D: Trailer, Empty, 100mm.

◇ 带盘 Reel Dimension

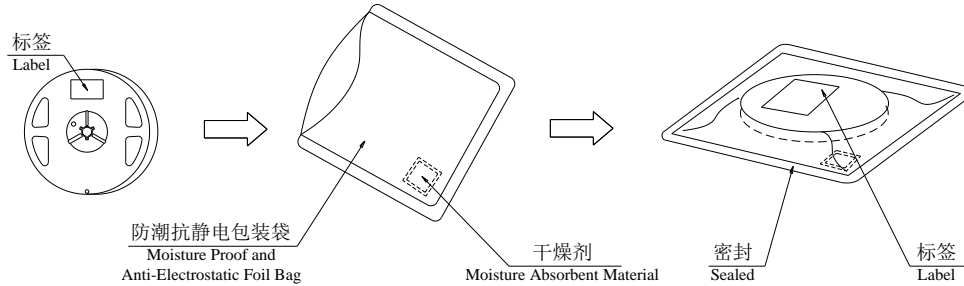
前进方向 Progressive Direction \longrightarrow



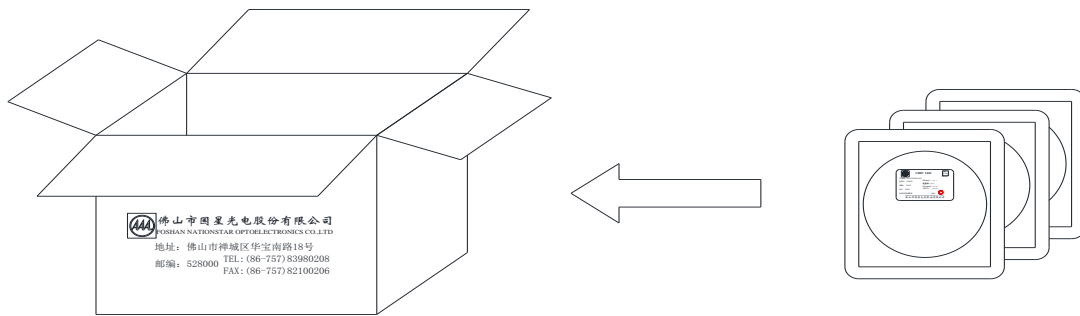
包装 (2)

Packaging(2)

防潮抗静电包装 Moisture Proof and Anti- Electrostatic Foil Bag



外包装箱 Cardboard Box



标签说明 Label Explanation

TYPE: 产品型号

QTY: 数量 Quantity

BIN: 分档 Rank

SC: 分档编号 Step Code

LOT: 批号 Lot Number

Ie: 辐射强度 Radiant Intensity

VF: 正向电压范围 Forward Voltage Range

IF: 测试电流 Testing Current

