



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	NCD3012I1
顾客部品号 Customer No.		版本号 Version NO	A 版



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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): 2022-12-05			

NCD3012I1

技术数据表 Technical Data Sheet

本产品一般应用于远程控制, 感应灯, 环境光线感应等。

This product is generally used in remote control, induction lamp, ambient light sensing, etc.

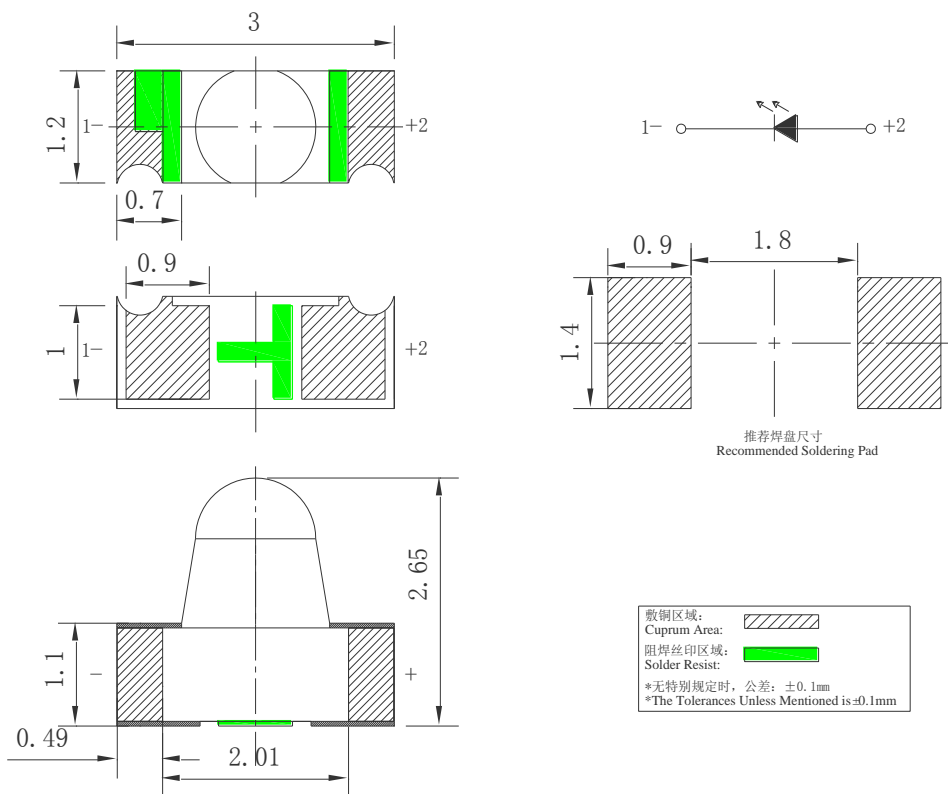
- 特性:**
- 管芯材料: AlGaAs
 - Material:
 - 封装材料: 环氧树脂
 - Encapsulation: Epoxy Resin
 - 焊接方法: 无铅回流焊
 - Soldering methods: Pb-Free reflow soldering
 - 功率高, 可靠性好, 寿命长
 - High Power, Good Reliability and Long Lifespan
 - 符合欧盟公布的 RoHS 指令要求
 - Complied With RoHS Directive



* 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





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	70	mA
正向脉冲电流* Pulse Forward Current*	I_{FP}	300	mA
反向电压 Reverse Voltage	V_R	5	V
工作温度 Operating Temperature	T_{OPR}	-40 ~ +85	°C
贮存温度 Storage Temperature	T_{stg}	-40 ~ +100	°C
功耗 Power Dissipation	P_D	140	mW

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

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
光电流 Light Current	I_L	Ee=1mW/cm2@ 940nm, VR=1.8V	0.25	-	-	μA
暗电流 Dark Current	I_D	Ee=0mW/cm2, VR=1V			10	nA
电容 Capacitance	C	Ee=0, VR=1V, f=1MHz			80	PF
视角 View Angle	2 $\theta_{1/2}$	-	-	20	-	deg
正向电压 Forward Voltage	V_F	$I_F=200mA$		1.6		V
峰值波长 Peak Wavelength	λ_p	$I_F=70mA$	930	950	970	nm
半波宽度 Spectrum Radiation Bandwidth	$\Delta\lambda$		-	48	-	nm
辐射强度 Radiant Intensity	I_e		40	60	-	mW/sr

* 注 1: 辐射强度偏差 $\pm 15\%$; 压降偏差 $\pm 0.1V$; (X,Y)坐标偏差 ± 0.01 ; 单色光波长偏差 $\pm 1nm$; 视角偏差 $\pm 10^\circ$ 。
 * Note1: Tolerance on each Radiant Intensity bin is $\pm 15\%$; Tolerance on each Forward Voltage bin is $\pm 0.1V$; Tolerance on each Hue(X,Y) bin is ± 0.01 ; Tolerance of Dominant Wavelength $\pm 1nm$; Tolerance of View Angle ± 10 .
 * 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.



光电参数 (2)

Electro-Optical Characteristics(2)

◇ 正向电压 (温度=25℃, 测试电流=200mA)

Forward Voltage (Ta=25 °C,IF=200mA)

典型电压档范围 Voltage Classification Range		
V_F	V1	1-2.2 V

◇ 辐射强度 (温度=25℃, 测试电流=70mA)

Radiant Intensity (Ta=25 °C,IF=70mA)

典型辐射强度档范围 Radiant Intensity		
I_e	I1	42-200 mW/sr

◇ 峰值波长 (温度=25℃, 测试电流=70mA)

Peak Wavelength (Ta=25 °C,IF=70mA)

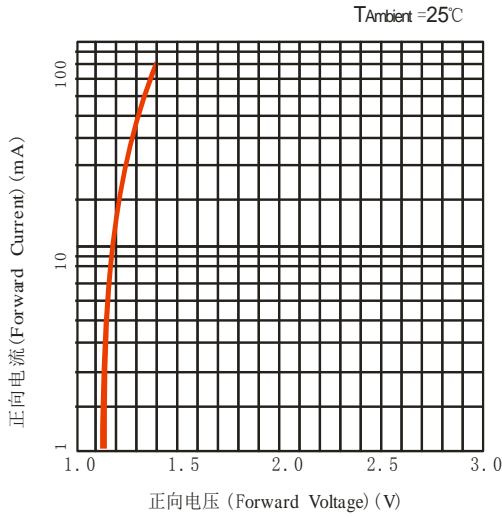
典型波长档范围 Dominant Wavelength Range		
λ_p	N1	930-970 nm

典型特性曲线

Typical Characteristics Curves

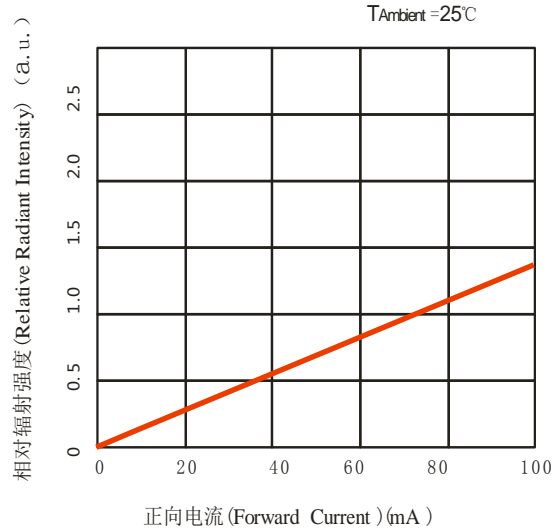
伏安特性

Volt-Ampere Characteristics



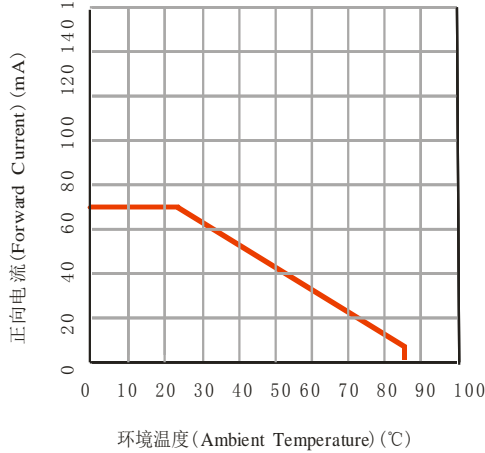
相对辐射强度与正向电流特性

Relative Radiant Intensity VS Forward Current



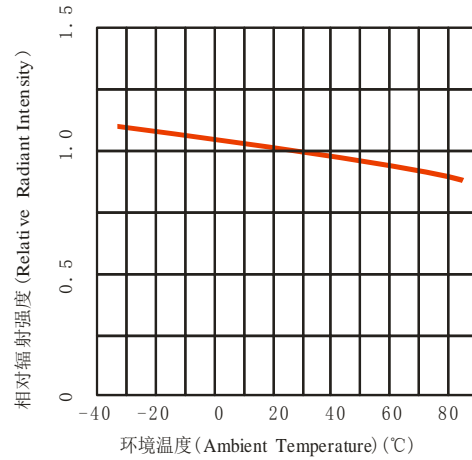
正向电流降额曲线

Forward Current Derating Curve



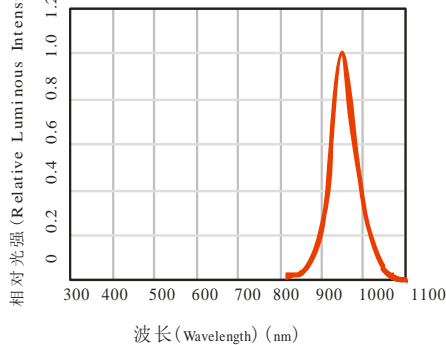
辐射强度与环境温度曲线

Radiant Intensity VS Ambient Temperature



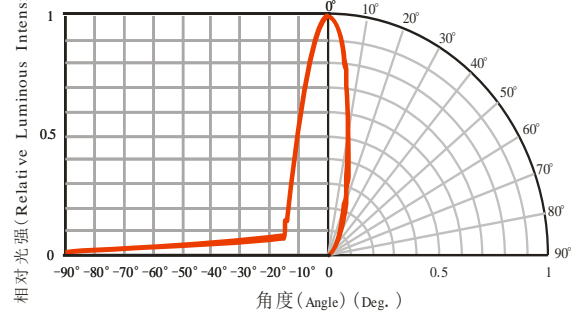
光谱分布特性曲线

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
耐焊接热 Resistance to Soldering Heat	GB/T 4937, II,2.2&2.3	Tsol*=260°C 10secs.	2次 2 times	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
高温贮存 High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000h	22	0/22
低温贮存 Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40°C	1000h	22	0/22
冷热冲击 Thermal Shock	MIL-STD-202G	-40°C (15min) ←→ 100°C (15min)	循环 200 次 200 cycles	22	0/22
常温寿命 Lifespan Test	JESD22-A108D	T=25°C, IF=10mA	1000h	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}	I _e 衰减 ≤ 50% I _e degradation ≤ 50%
耐焊接热 Resistance to Soldering Heat	/	/	无死灯 No dead light

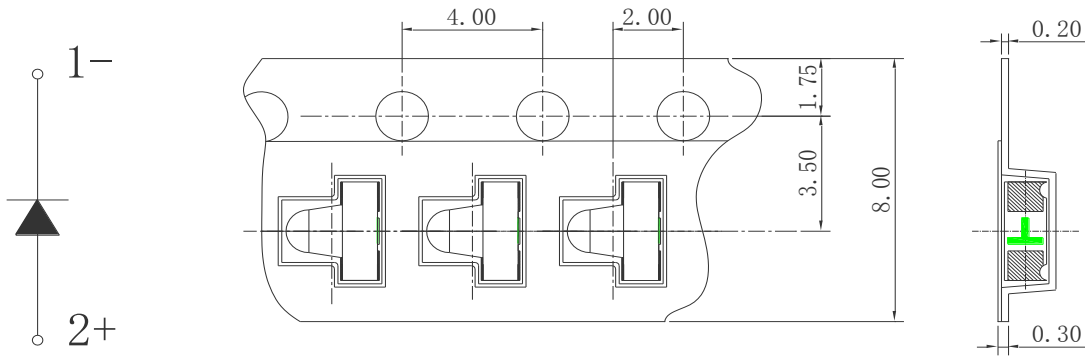
* 注: Tsol-锡液温度; I_{FT}: 典型电流

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

包装 (1)

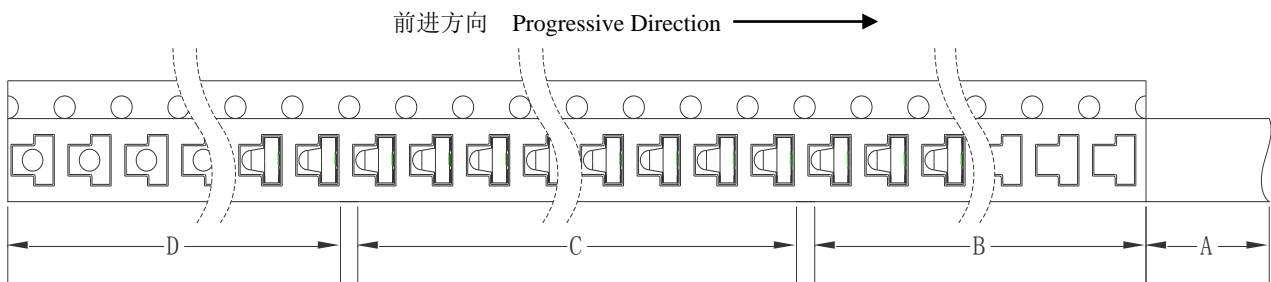
Packaging (1)

◇ 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.

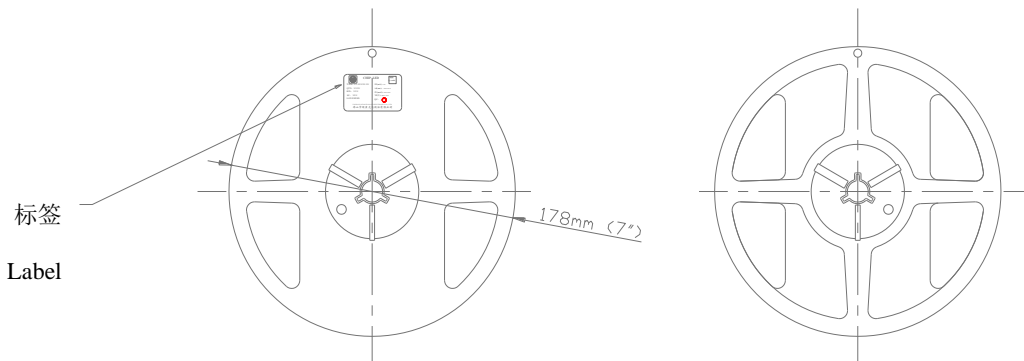
◇ 编带细节 Details Of Carrier Tape



A: 盖带, 100 mm; B: 引导, 空带, 300mm; C: 编载产品 3000 只; D: 尾部, 空带, 200mm
 A: Top Cover Tape, 100mm; B: Leader, Empty, 300mm; C: 3000 Lamps Loaded; D: Trailer, Empty, 200mm.

◇ 带盘 Reel Dimension

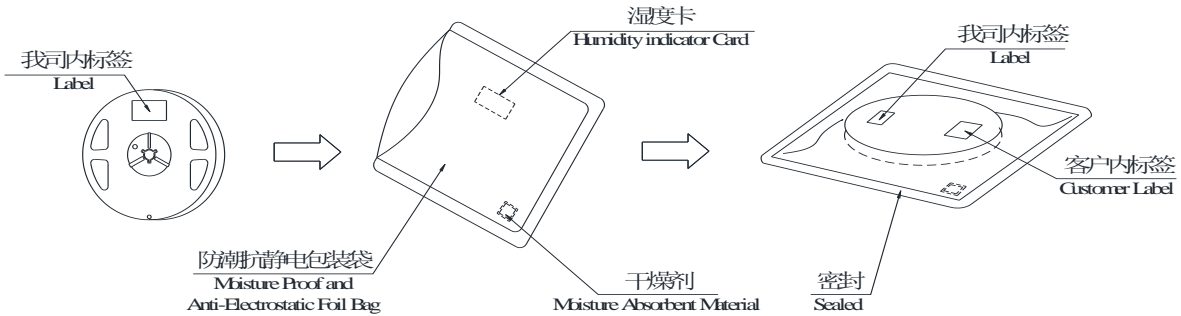
前进方向 Progressive Direction →



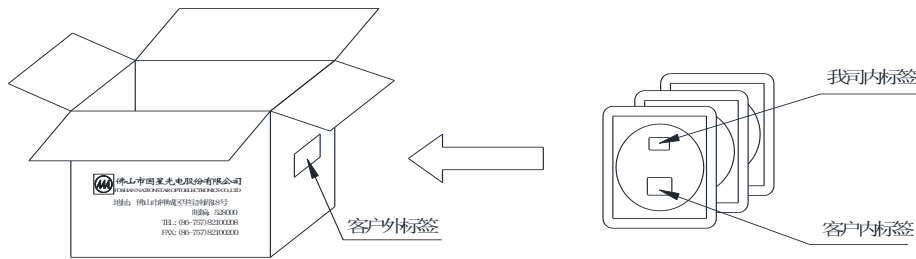
包装 (2)

Packaging (2)

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

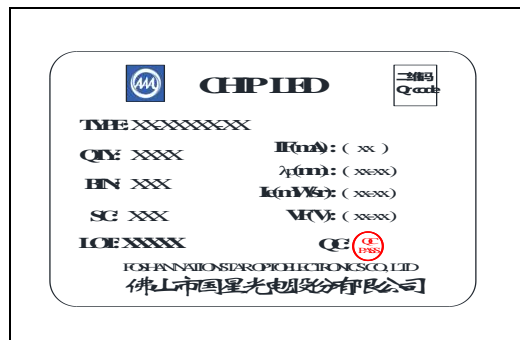


外包装箱 Cardboard Box



标签说明 Label Explanation

- 1、外箱标签贴客户专用外标签;
- 2、防静电包装袋上标签贴客户专用内标签和我司内标签;
- 3、料盘标签贴我司内标签;
- 4、标签模板举例:



备注: 我司内标签主要字段说明:

- | | |
|--------------------|-------------------------------------|
| TYPE: 产品型号 | IF: 测试电流 Testing Current |
| QTY: 数量 Quantity | I_e : 辐射强度 Radiant Intensity |
| BIN: 分档 Rank | λp : 波长范围 Wavelength Range |
| SC: 分档编号 Step Code | VF: 正向电压范围 Forward Voltage Range |
| LOT: 批号 Lot Number | |