



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	NCD1005I1
顾客部品号 Customer No.		版本号 Version NO	A 版



地址: 广东省佛山市禅城区华宝南路 18 号  
 Add: NO.18 South Huabao Rd, Foshan, Guangdong, China  
 电话 (Tel): 0757-82100219  
 传真 (Fax): 0757-82100220  
 邮编 (Zip): 528000  
 邮箱 (Email): chipLED@nationstar.com  
<http://www.nationstar.com>

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			

# NCD1005I1

## 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，主要应用于各种消费电子、传感器及可穿戴设备中。

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 consumer electronics, sensors and wearable devices.

- 特性:**
- 管芯材料: InGaAs  
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
  - 光强高, 功耗低, 可靠性好, 寿命长  
High Luminous Intensity ,Low Power Dissipation, Good Reliability and Long Lifespan
  - 符合欧盟公布的 ROHS 指令要求  
Complied With ROHS Directive

垂直腔表面发射激光器  
VCSEL

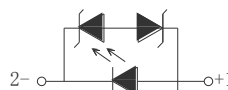
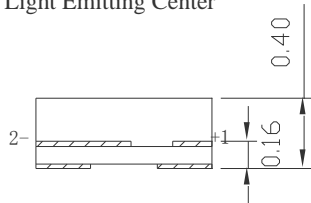
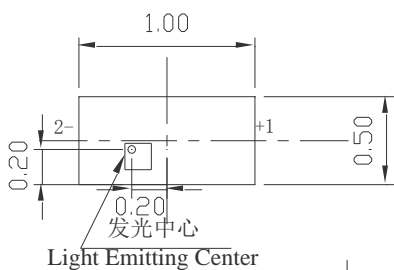


\* 产品规格如因工艺改进而有所改变, 恕不另行通知。

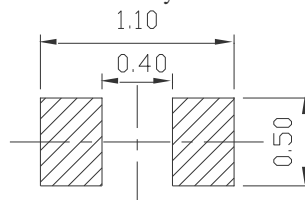
\* The specifications of the product may be modified for improvement without notice.

## 外形尺寸

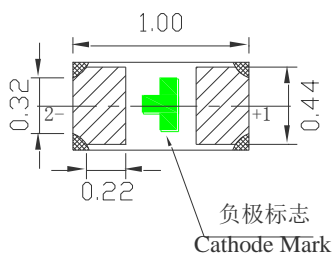
### Outline Dimension



极性  
Polarity



推荐焊盘尺寸  
Recommended Soldering Pad



敷铜区域:  
Cuprum Area:

阻焊丝印区域:  
Solder Resist:

无特别规定时, 公差: ±0.10mm  
The Tolerances Unless Mentioned is : ±0.10mm



## 光电参数(1)

### Electro-Optical Characteristics(1)

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
正向脉冲电流* Pulse Forward Current*	I <sub>FP</sub>	25	mA
反向电压 Reverse Voltage	V <sub>R</sub>	5	V
工作温度 Operating Temperature	T <sub>OPR</sub>	-40 ~ +85	°C
贮存温度 Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
功耗 Power Dissipation	P <sub>D</sub>	36	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 <sub>R</sub>	V <sub>R</sub> =5V	-	-	10	μA
发光面积直径 Luminescent Area Diameter	-	-	-	-	0.3	mm
视角 Beam Divergency	θ	-	-	-	25	deg.
正向电压 Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =15mA	1.8	2.0	2.4	V
光功率 Output Optical Power	P <sub>O</sub>		7			mW
峰值波长 Peak Wavelength	λ <sub>P</sub>		930	940	950	nm
半波宽度 Spectrum Radiation Bandwidth	Δλ		-	-	10	nm

\* 注 1: 光功率偏差±15%; 压降偏差±0.1V。

\* Note1: Tolerance on each Output Optical Power bin is ±15%; Tolerance on each Forward Voltage bin is ±0.1V.

\* 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=15 mA)  
Forward Voltage (Ta=25 °C, IF=15mA)

典型电压档范围 Voltage Classification Range	
$V_F$	1.8-1.9 V
	1.9-2.0 V
	2.0-2.1 V
	2.1-2.2 V
	2.2-2.3 V
	2.3-2.4 V

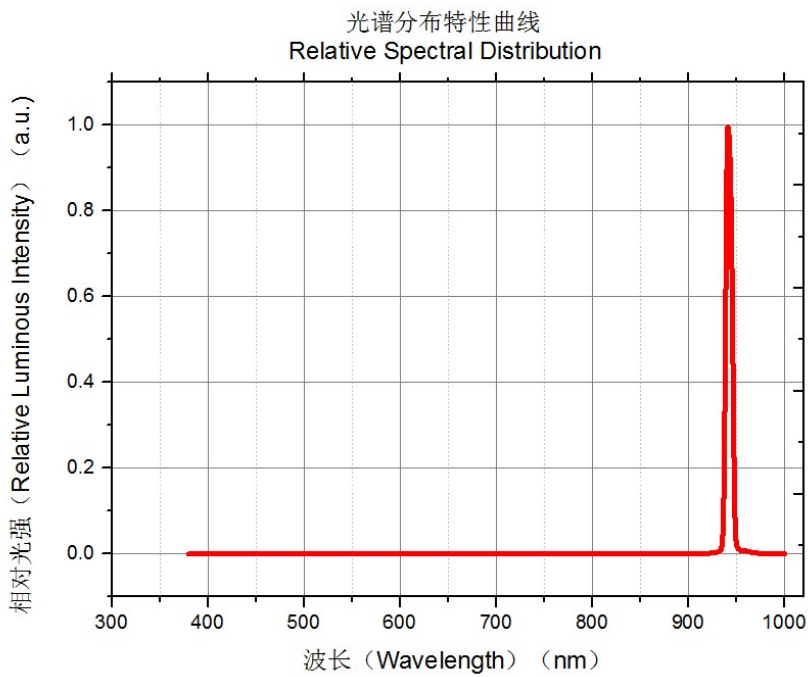
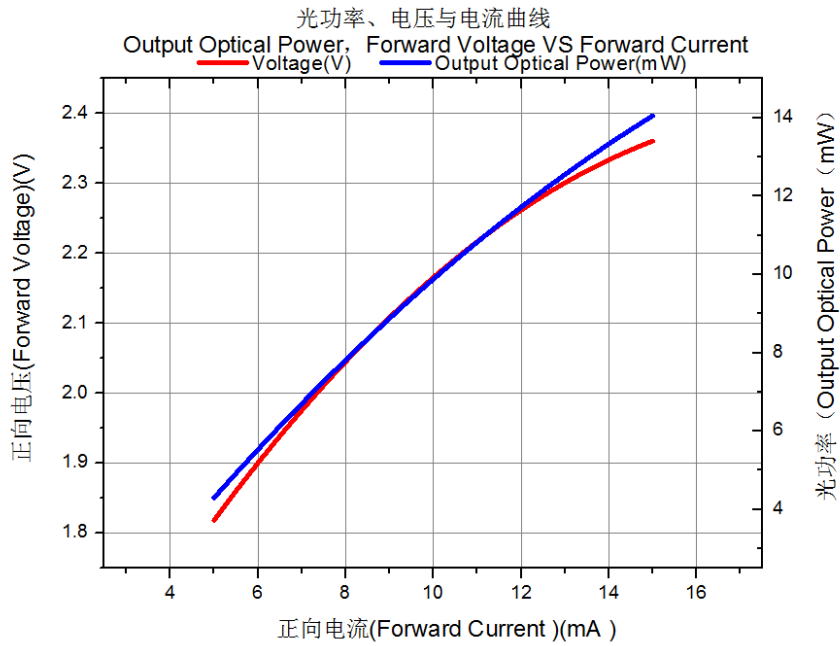
- ✧ 光功率 (温度=25℃, 测试电流=15 mA)  
Luminous Intensity (Ta=25 °C, IF=15mA)

典型光功率档范围 Output Optical Power Classification Range	
$P_o$	7.35-40 mW



## 典型特性曲线

### Typical Characteristics Curves





## 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 <sub>F</sub>	I <sub>F</sub> = I <sub>FT</sub>	初始值±10% Initial Data±10%
反向电流 Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 5V	I <sub>R</sub> ≤ 10μA
光功率 Output Optical Power	P <sub>O</sub>	I <sub>F</sub> = I <sub>FT</sub>	P <sub>O</sub> 衰减 ≤ 50% Po 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<sub>sol</sub>-锡液温度; I<sub>FT</sub>: 典型电流

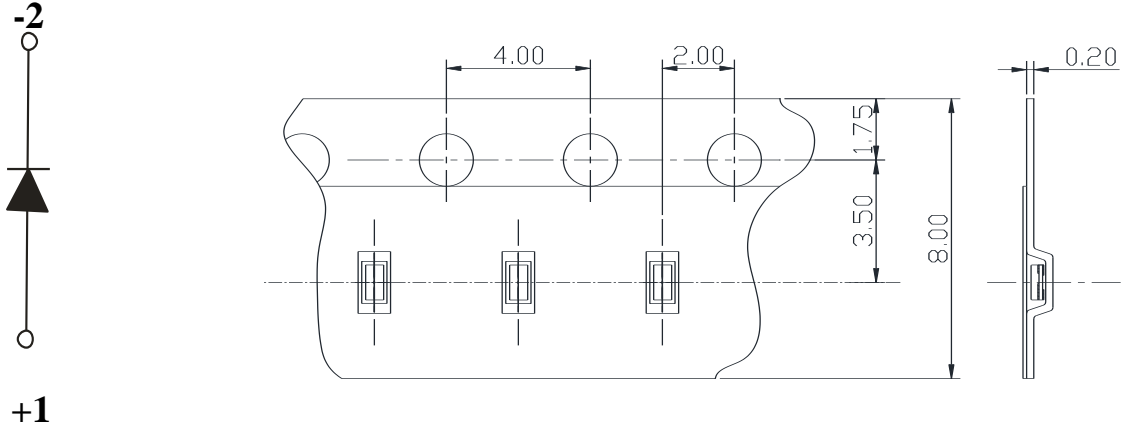
\* Note: T<sub>sol</sub>-Temperature of tin liquid; I<sub>FT</sub>: Typical current.



# 包装 (1)

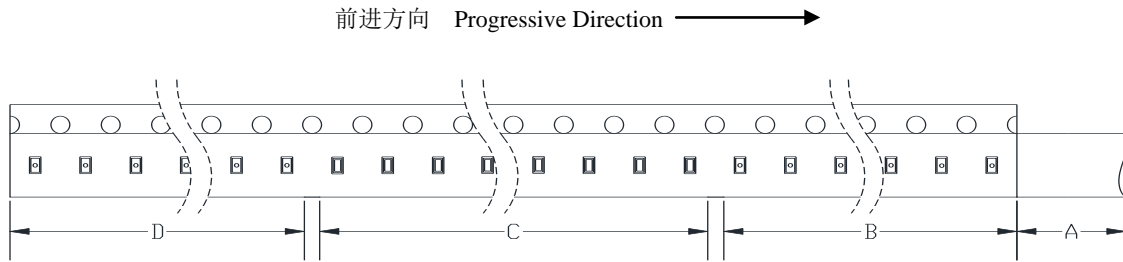
## Packaging (1)

### ◇ 载带 Carrier Tape



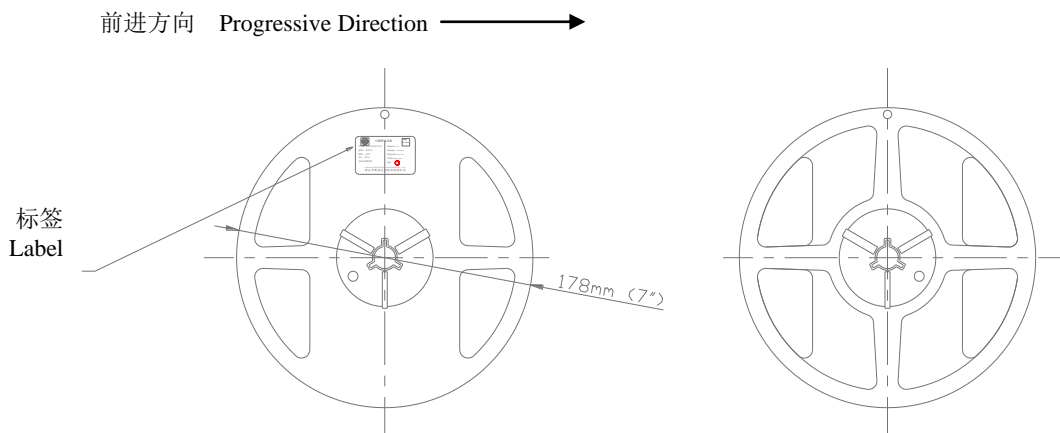
单位: mm, 未注公差:  $\pm 0.1$  mm  
All dimensions in mm, tolerances unless mentioned is  $\pm 0.1$  mm.

### ◇ 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, 8000mm  
A: Top Cover Tape, 100mm; B: Leader, Empty, 300mm; C: 3000 Lamps Loaded; D: Trailer, Empty, 8000mm.

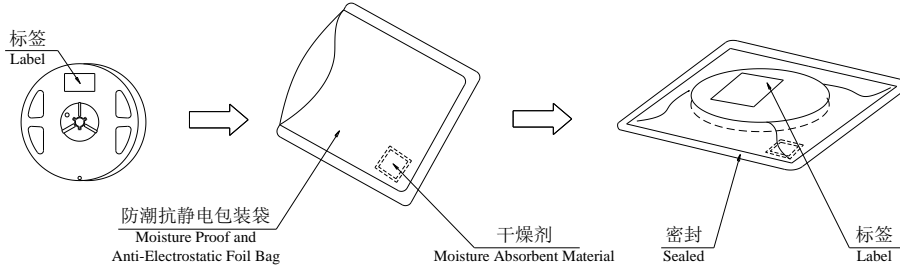
### ◇ 带盘 Reel Dimension



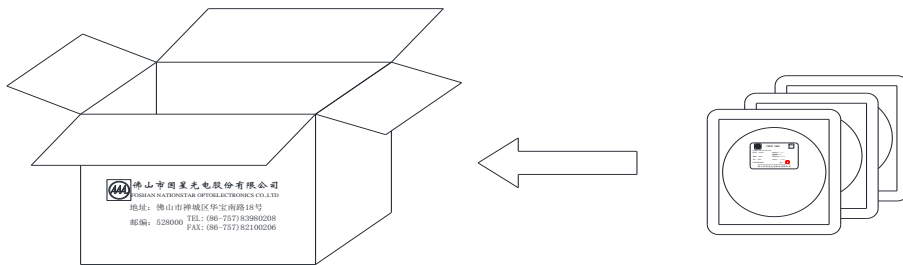
## 包装(2)

### 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

IF: 测试电流 Testing Current

QTY: 数量 Quantity

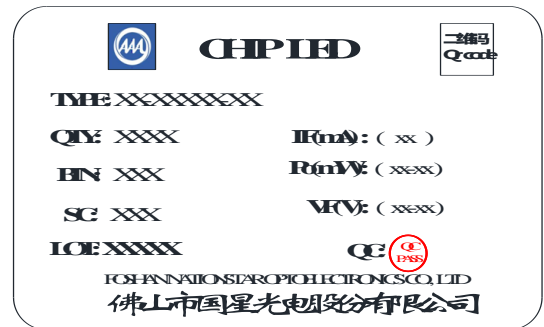
Po: 光功率 Output Optical Power

BIN: 分档 Rank

VF: 正向电压范围 Forward Voltage Range

SC: 分档编号 Step Code

LOT: 批号 Lot Number





## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Infrared Emitters](#) category:*

*Click to view products by [NationStar](#) manufacturer:*

Other Similar products are found below :

[LTE-3279K](#) [LTE-4208C](#) [LTE-2871C](#) [LTE-4238](#) [ASDL-4264-C22](#) [IR11-21CTR8](#) [EAIPL3528Z0](#) [OP216-004](#) [LTE-3376](#) [OSIXCA5B41A](#)  
[OSI5120631F](#) [IR234C](#) [LTE-C195IRG](#) [ZSIR-3210C-15A-C3](#) [ZSIR-3020C-23A-Z6](#) [IR333C-A\(BY\)\(P\)](#) [IR19-21C/TR8\(BY\)](#) [HIR26-](#)  
[21C/L423/CT\(XY\)](#) [IR928-6C/F1\(6-1\)](#) [IR423C/L10/F393\(AMZ\)\(PF\)](#) [EAISV3027A0](#) [HIR26-81B/L423/2T](#) [IR908-7C\(E5\)](#) [IR204-A-L\(BY\)\(M\)](#)  
[IR333C-A\(BY\)\(Q\)](#) [IR928-6C\(X8-X12\)\(XBY\)](#) [IR968-8C\(6-2\)](#) [IR204C-A-L\(BY\)\(M\)](#) [IR968-8C\(6-1\)](#) [XYC-HIR76C-LX0](#) [XYC-IRA3020A65-](#)  
[SX4](#) [XYC-HIR76C-LX4](#) [XYC-IRA3020A65-SX1](#) [DY-IRS302320C/6.5T](#) [DY-PTS3020268B-6.5TC](#) [DY-IR-8S302320C-6.5T](#) [DY-IR928-6C](#)  
[XL-504IRC-940](#) [XL-SD3036HIR-T202](#) [IR12-21C/TR8\(PF\)](#) [NCD3012I1](#) [NCD1005I1](#) [XYC-IR26C-LX4](#) [XYC-IR204C-L4](#) [XYC-IRC18C-24](#)  
[XYC-IR76C30-LX4](#) [XYC-IRA0805AC-S4](#) [XYC-HIRWC18C-Z2](#) [XYC-IRP0603AC-A2](#) [XYC-IRA2835A90-X4](#)