

## 产品介绍 Product introduction

NDT4015是一款小型封装带有高增益高速响应的硅雪崩光电二极管。

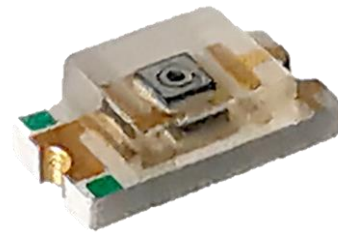
The NDT4015 is a Si avalanche photodiode with high operation frequency and high multiplication gain in a small package.

## 特点 Features

·雪崩电压：120V~160V  
Avalanche voltage: 120V~160V

·波长400-1050nm  
Wavelength 400-1050nm

·有效面积：直径500um  
Active Area: Diameter 500um



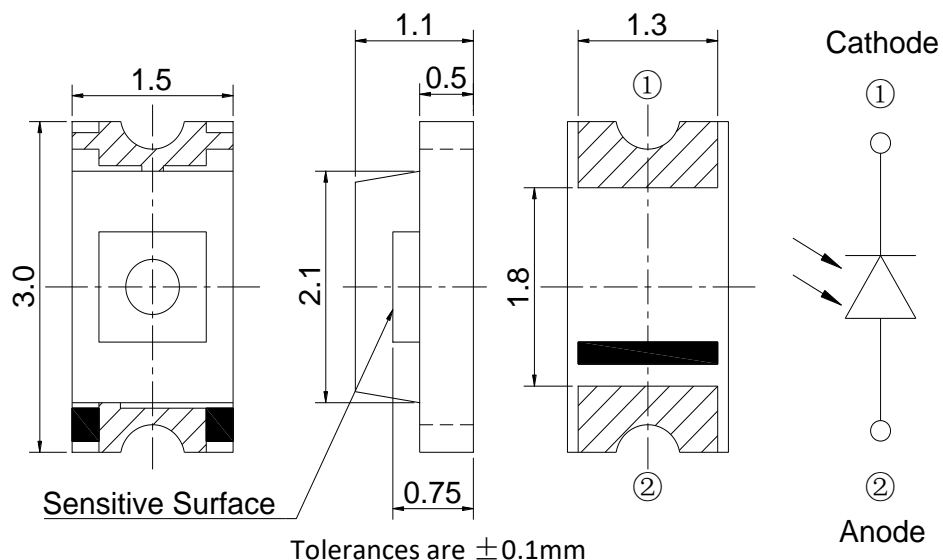
## 用途 Application

·激光测距，示警，雷达  
Laser range finder, alarming, radar

·微弱光学探测  
Ultra Weak pulse optical detecting

·光通信  
Optical communication

## 产品外形图 DEVICE DIMENSIONS (mm)



**MAXIMUM RATINGS/极限值**

(Ta= 25°C)

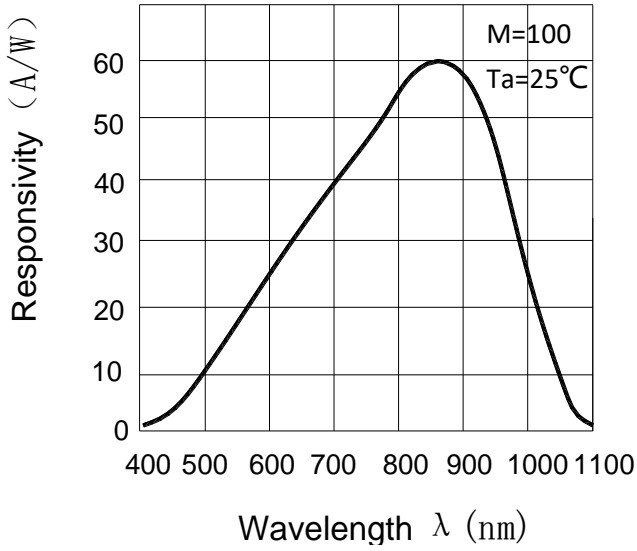
项目 Item	符号 Symbol	额定值 Rating	单位 Unit
正向电流 Forward Current	$I_F$	1	mA
反向峰值电流 Reverse Current	$I_R$	0.25	mA
工作温度 Operating temp.	Topr.	-20~+60	°C
存储温度 Storage temp.	Tstg.	-40~+80	°C
焊接温度 Soldering temp.	Tstg.	260	°C

**Electro-optical characteristics/光电特性**

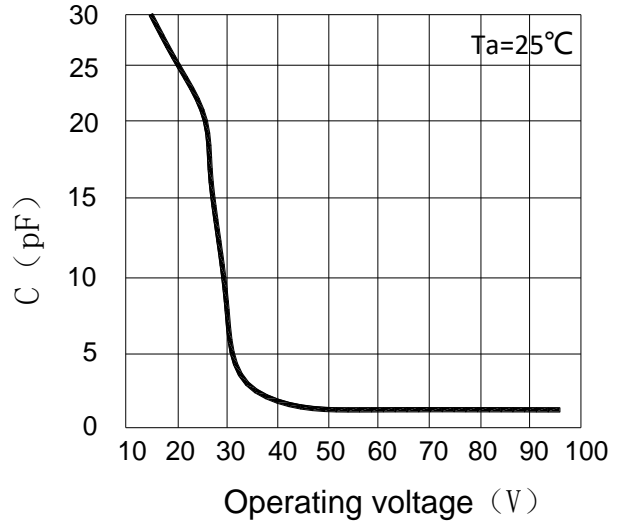
(Ta= 25°C)

项目 Items	符号 Symbol	条件 Condition	最小 Min.	典型 Typ.	最大 Max.	单位 Unit
光谱响应范围 Response Spectrum	$\lambda$	M=1	400	-	1050	nm
峰值响应波长 Peak Sensitivity Wavelength	$\lambda_P$	-	-	860	-	nm
响应度 Responsivity	Re	$\lambda=905, M=1$	-	0.55	-	A/W
反向击穿电压 Reverse Breakdown Voltage	$V_{BR}$	$I_R=100\mu A$	120	-	160	V
击穿电压温度系数 Reverse Breakdown Voltage Temperature Coefficient	$\delta$	-	-	1.4	-	V/°C
暗电流 Dark current	$I_D$	M=100	-	0.6	2	nA
响应时间 Response Time	Ts	M=100, $R_L=50\Omega$ , $\lambda=800nm$	-	0.35	-	ns
电容 Capacitance	C	M=100, f=1MHz	-	2.2	-	pF
截止频率 Cutoff Frequency	$f_c$	M=100, $R_L=50\Omega$ , $\lambda=800nm, -3dB$	-	1	-	GHz
放大倍数 Gain	M	-	-	100	-	-

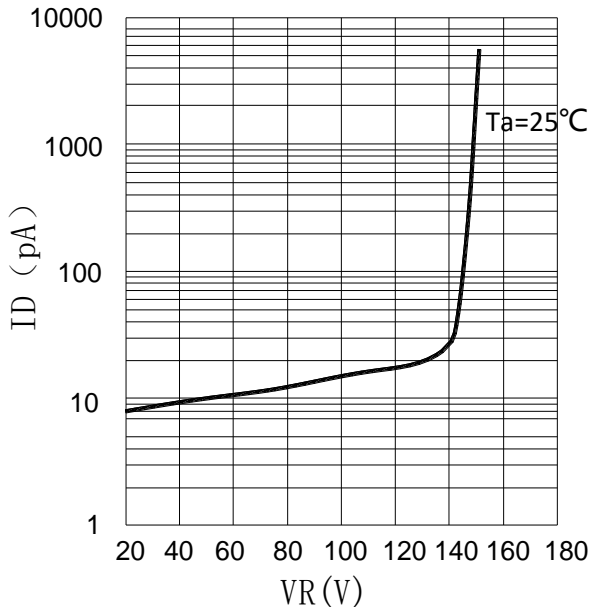
Responsivity vs.Wavelength



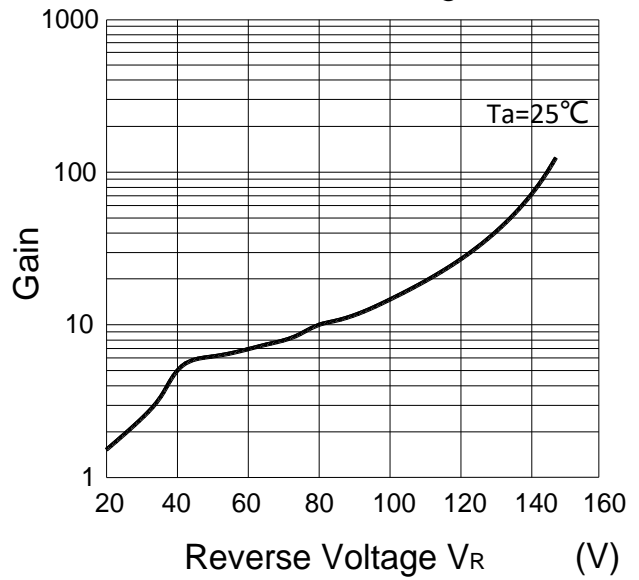
Capacitance vs Operating voltage



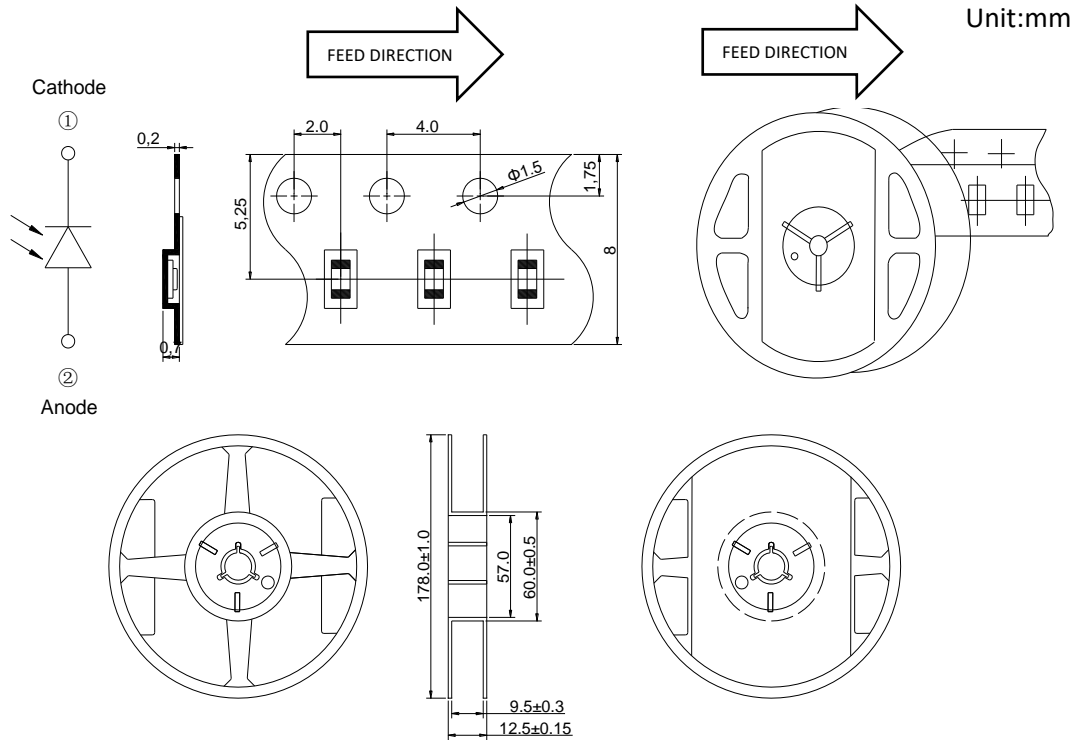
Dark Current vs. VR



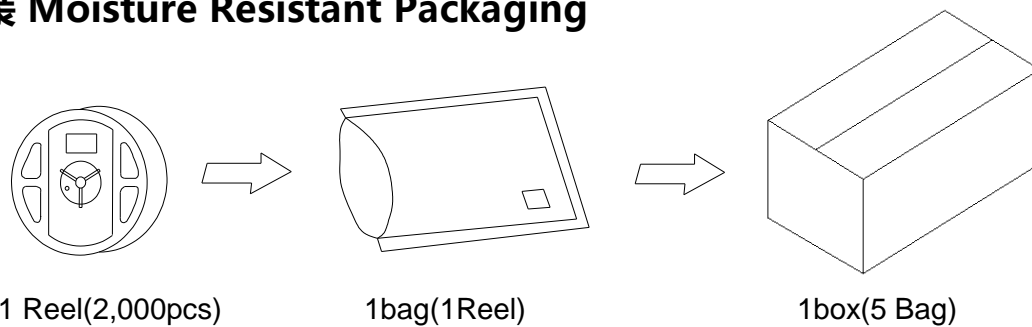
Gain VS Reverse Voltage



## 卷轴尺寸 Carrier Tape Dimensions



## 防潮包装 Moisture Resistant Packaging

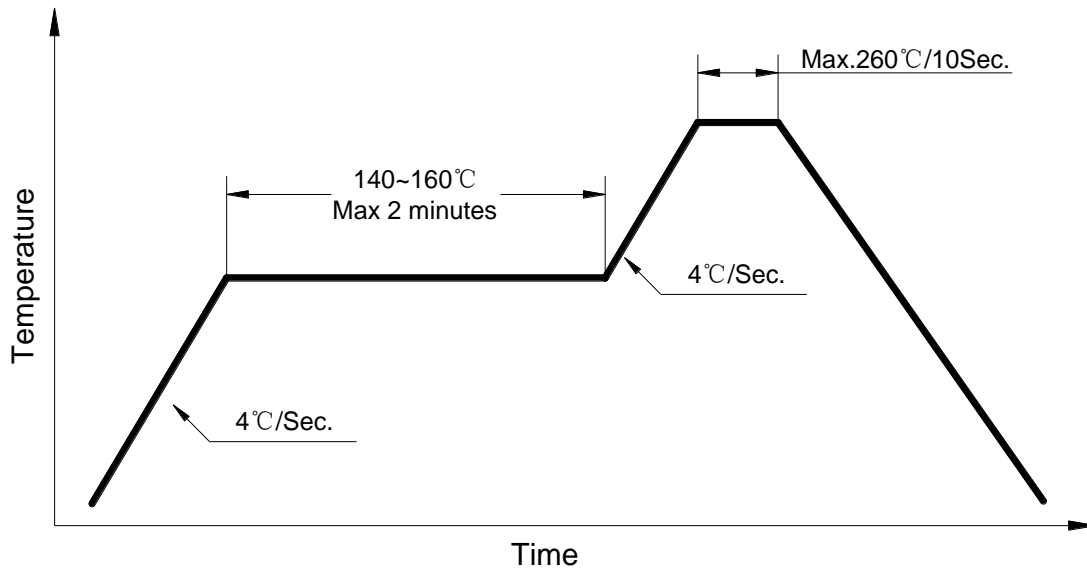


注意:

Note:

- 1.所有尺寸除非另有说明，否则单位均为毫米，公差为 $\pm 0.2$ 毫米  
All Dimensions are in millimeters, Tolerance is  $\pm 0.2$ mm unless otherwise noted .
- 2.规格如有变更，恕不另行通知  
Specifications are subject to change without notice.
- 3.2,000pcs/袋， 10,000pcs/箱  
1Bag:2,000pcs , 1Box:10,000pcs.
- 4.采用真空、防潮、防静电袋包装  
Packing with vacuum moisture-proof and anti-static bags.
- 5.每个袋内都配有干燥剂  
Desiccant are put into the each bag.

## 回流焊参考曲线/Reflow Soldering Temp/Time Profile



### 注意/CAUTION

1.开启包装前, 请按如下条件保存:

Before the bag is opened, please keep the following storage condition:

温度  $T=5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ , 湿度  $\text{RH}<60\%$ , 时间  $t<12$ 个月。

Temperature:  $5^{\circ}\text{C}-30^{\circ}\text{C}$ , Humidity:  $\text{RH} 60\% \text{ Max}$ , Time: 12 Months.

2.开启包装后, 如果器件要进行红外、气相回流焊或其它相似工艺焊接, 请按如下方式保存:

After this bag is opened, The device that will be applied to infrared reflow, vapor-phase reflow, or equivalent soldering process must be:

a)保存湿度  $\text{RH}<20\%$ ;

Stored at less than 20% RH;

b)在168小时内可以完成焊接时, 保存条件: 温度  $T<30^{\circ}\text{C}$ , 湿度  $\text{RH}<60\%$ ;

Mounted within 168 hours: Temperature:  $30^{\circ}\text{C} \text{ Max}$ , Humidity:  $\text{RH} 60\% \text{ Max}$ ;

c) 在包装开启时, 如果湿度指示卡显示超过30%, 请烘烤后再进行回流焊接。

When opened the Bag, the value of Humidity card is exceed 30%, Baking is required before mounting.

3.如果没有满足上述条件, 则再次焊接前需要进行烘烤。

If above conditions are not met, baking is required before mounting.

烘烤条件:  $t=12$ 小时,  $T=60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ ,  $\text{RH}<5\%$

Baking condition: 12 hours at  $60 \pm 3^{\circ}\text{C}$  and  $<5\% \text{ RH}$ .