产品介绍/Product Introduction:

NIR1B02是一款高性能的反射型光电开关，由一对砷化镓红外发光管和高灵敏度硅光敏三极管组成。
The NIR1B02 is a high performance reflection photo interrupter,which is optically composed of a GaAs IRED and a high sensitivity silicon phototransistor.

特点/Features:

·硅光敏三极管
Silicon phototransistor

·反射型
Reflection type

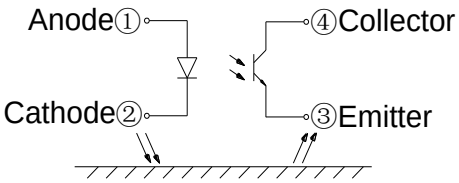
用途/Application:

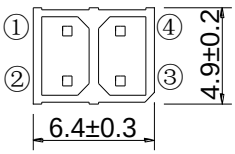
·办公自动化设备
Office automation equipment

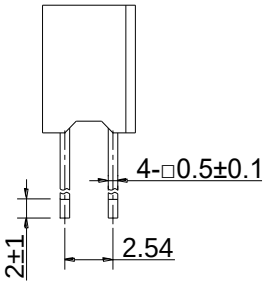
·开关扫描仪
Switch Scanner

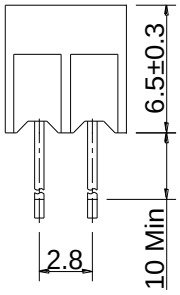
·非接触式开关
Non-contact Switching

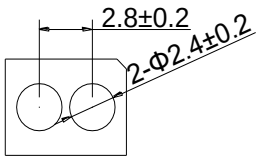
尺寸图/Device Dimensions(mm):











极限值/Maximum Ratings (Ta= 25℃)

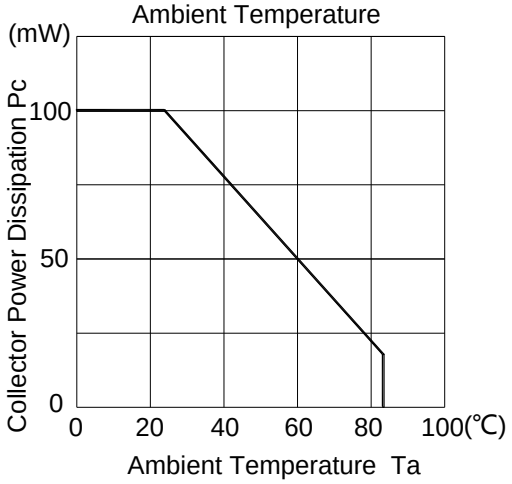
项目 Items		符号 Symbol	额定值 Rating	单位 Unit
Input	正向电流 Forward Current	I_F	50	mA
	反向击穿电压 Reverse Breakdown Voltage	V_R	5	V
	功耗 Power Dissipation	P_D	75	mW
	峰值电流*1 Pulse Forward Current	I_{FP}	1	A
Output	集电极-发射极电压 Collector-Emitter Voltage	V_{CEO}	30	V
	发射极-集电极电压 Emitter-Collector Voltage	V_{ECO}	5	V
	集电极电流 Collector Current	I_C	50	mA
	集电极功耗 Collector Power Dissipation	P_C	75	mW
工作温度 Operating Temperature		Topr	-25～+85	℃
保存温度 Storage Temperature		Tstg	-40～+85	℃
焊接温度*2 Soldering Temperature		Tsol	260	℃

Note: *1. 测试条件：脉冲宽度：tw≤100us. 占空比：1/100。
Test condition: Pulse width: tw≤100us. Duty: 1/100.
*2. 距离封装边缘2mm，时间不超过5秒。
2mm form body within 5 seconds.

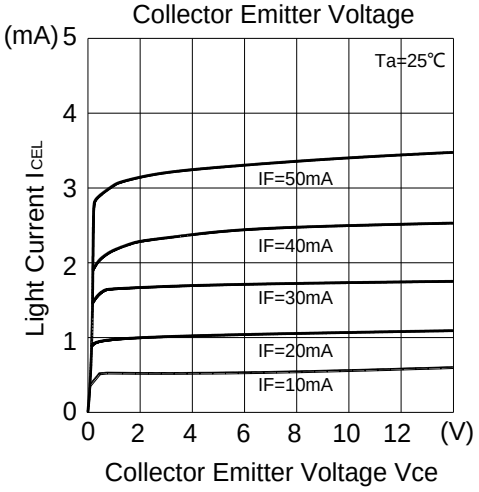
光电特性/Electro-optical Characteristics (Ta= 25℃)

项目 Items		符号 Symbol	条件 Condition	最小 Min.	典型 Typ.	最大 Max.	单位 Unit
Input	正向压降 Forward Voltage	V_F	I_F=20mA	-	1.2	1.5	V
	反向电流 Reverse Current	I_R	V_R=5V	-	-	10	uA
	峰值波长 Peak Wavelength	λ_p	-	-	940	-	nm
Output	暗电流 Collector Dark Current	I_{CEO}	V_{CE}=20V	-	-	100	nA
	饱和压降 Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2mA	-	-	0.4	V
Transfer	光电流 Collector Light Current	I_{CEL}	I_F=20mA, V_{CE}=5V	0.6	-	-	mA
	上升时间 Rise Time	tr	V_{CE}=5V,I_C=1mA, R_L=1kΩ	-	25	-	us
	下降时间 Fall Time	tf	V_{CE}=5V,I_C=1mA, R_L=1kΩ	-	25	-	us

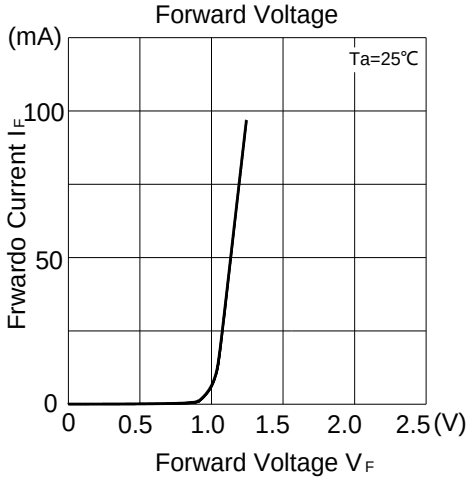
Collector Power Dissipation VS. Ambient Temperature



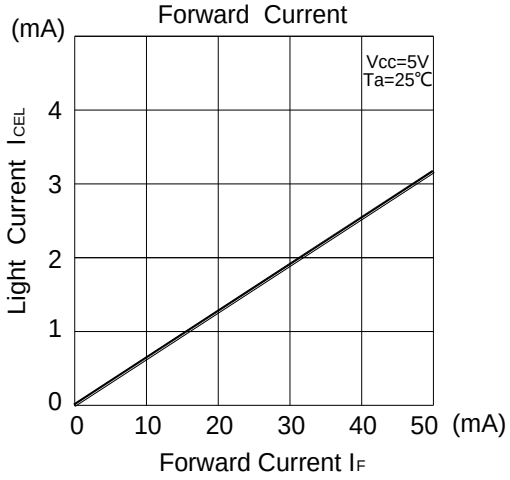
Light Current VS. Collector Emitter Voltage



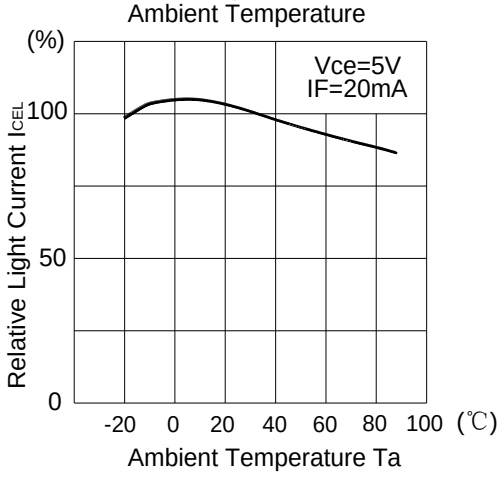
Forward Current VS. Forward Voltage



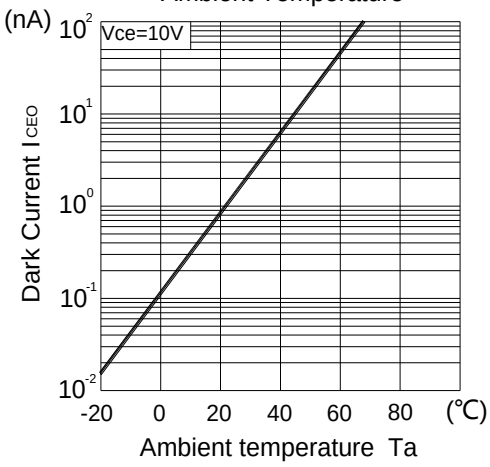
Light Current VS. Forward Current



Relative Light Current VS. Ambient Temperature



Dark Current VS. Ambient Temperature



Emitting Diode Relative Intensity Vs. Wavelength

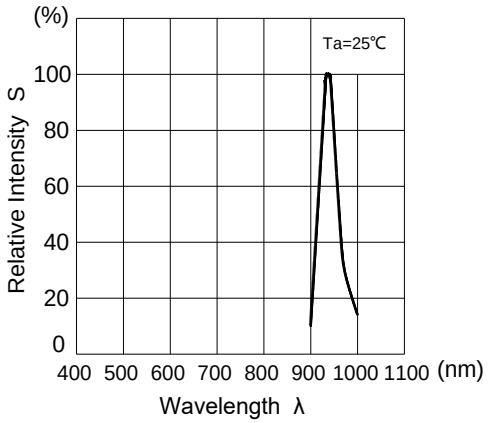
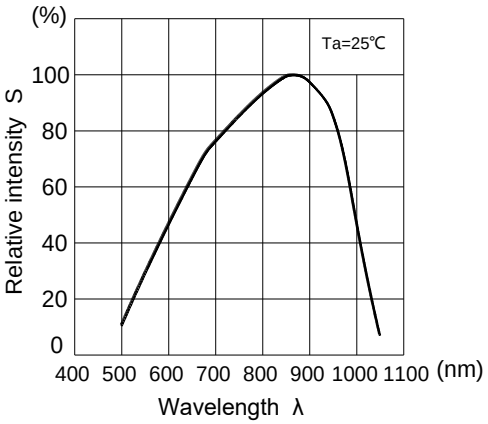
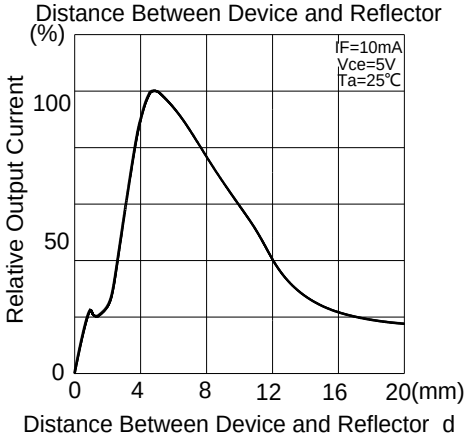


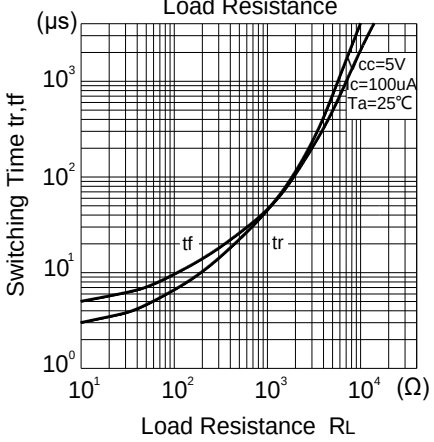
Photo Transistors Relative Sensitivity Vs. Wavelength



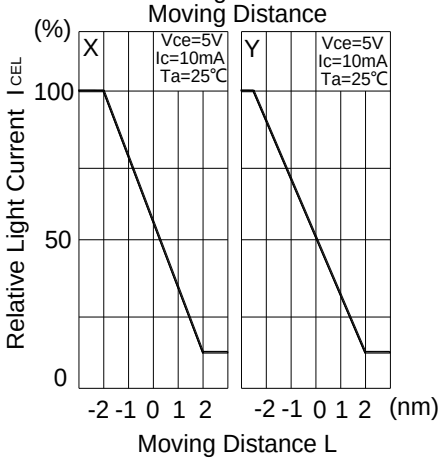
Relative Output Current VS. Distance Between Device and Reflector



Switching Time VS. Load Resistance



Relative Light Current VS. Moving Distance



Method of Measuring Position Detection Characierstic

