

# SIR-SD5

## Photo Interrupter (Reflective)

SIR-SD5 reflective sensor combines a GaAs IrED with a high-sensitivity phototransistor in a super-mini ( $\Phi 4$ ) ceramic package, reducing installation space.

### Features

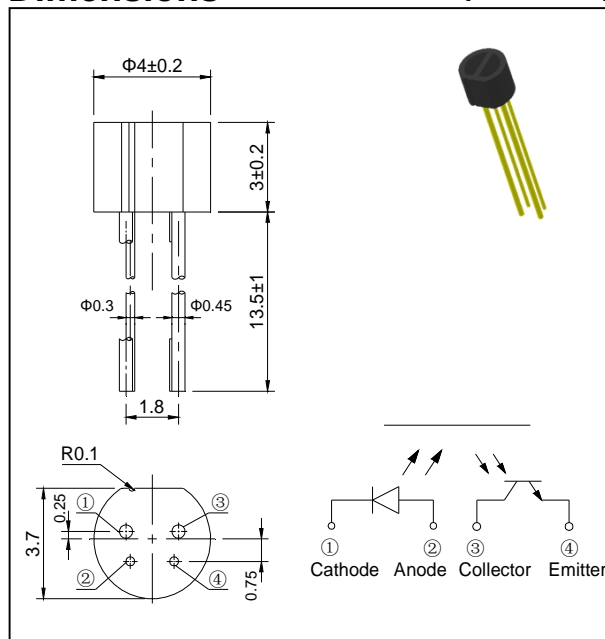
- Compact ( $\Phi 4$ mm)
- High performance
- High-speed response
- Easy to mount on PCB
- Widely applicable

### Application

- Timing sensors
- Edge sensors
- Level sensors of liquid

### Dimensions

(Unit:mm)



### MAXIMUM RATINGS

(Ta= 25°C)

Item	Symbol	Rating	Unit	
Input	Power dissipation	P <sub>D</sub>	75	mW
	Reverse voltage	V <sub>R</sub>	5	V
	Forward current	I <sub>F</sub>	50	mA
Output	Collector power dissipation	P <sub>C</sub>	75	mW
	Collector current	I <sub>C</sub>	20	mA
	C-E voltage	V <sub>CEO</sub>	30	V
	E-C voltage	V <sub>ECO</sub>	3	V
Operating temp.	T <sub>opr.</sub>	-20~+90	°C	
Storage temp.	T <sub>stg.</sub>	-30~+100	°C	
Soldering temp. <sup>*2</sup>	T <sub>sol.</sub>	260	°C	

\*1. Lead Soldering Temperature(3mm from package for 5sec)

### ELECTRO- OPTICAL CHARACTERISTICS

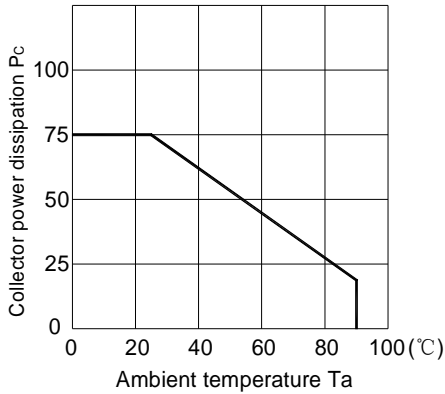
(Ta= 25°C)

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward voltage	I <sub>F</sub> =4mA	-	-	1.2	V
	Reverse current	V <sub>R</sub> =5V	-	-	10	μA
	Peak wavelength	I <sub>F</sub> =20mA	-	940	-	nm
Output	Collector dark current	V <sub>CEO</sub> =10V	-	-	0.1	μA
	Light current	V <sub>CE</sub> =2V, I <sub>F</sub> =4mA	-	100	-	μA
	Leakage current	V <sub>CE</sub> =2V, I <sub>F</sub> =4mA	-	-	0.1	μA
Switching speeds Rise time	t <sub>r</sub>	V <sub>CC</sub> =2V, I <sub>C</sub> = 100μA ,	-	30	-	μsec
Switching speeds Fall time	t <sub>f</sub>	R <sub>L</sub> =1KΩ	-	30	-	μsec

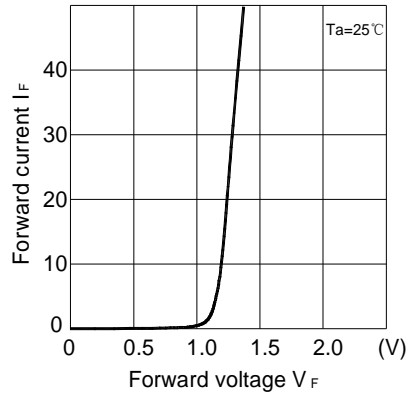
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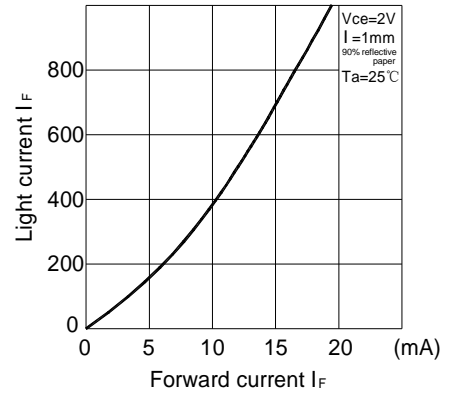
Collector power dissipation Vs. Ambient temperature



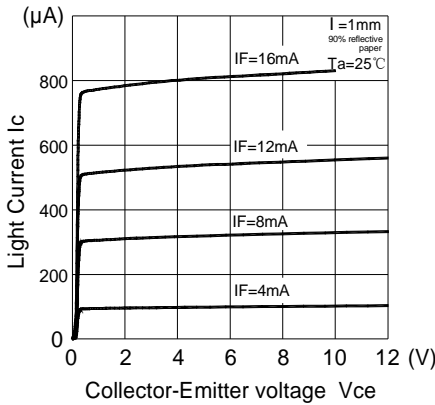
Forward current Vs. Forward voltage



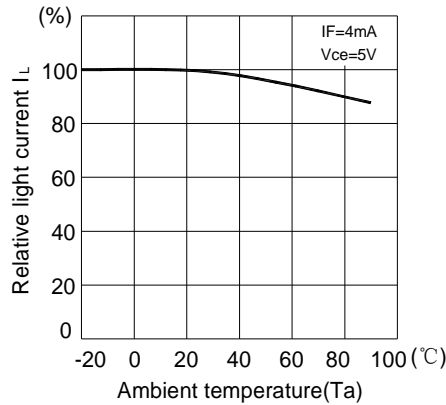
Light current Vs. Forward current



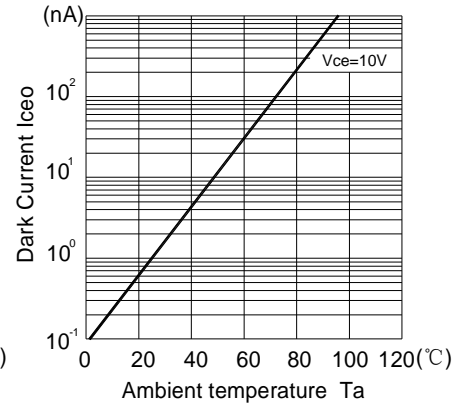
Light current Vs. Collector-Emitter Voltage



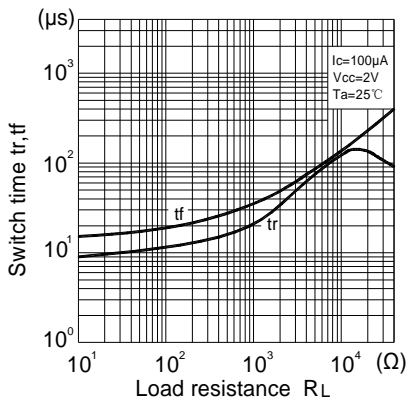
Relative light current Vs. Ambient temperature



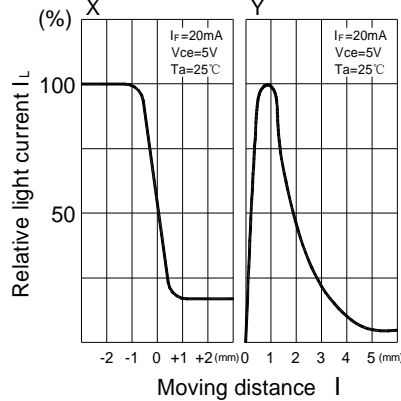
Dark Current Vs. Ambient temperature



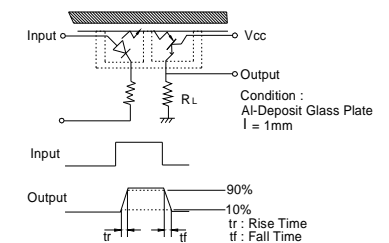
Switch time Vs. Load resistance



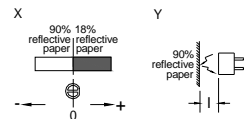
Relative light current Vs. Moving distance



Switching time measurement circuit

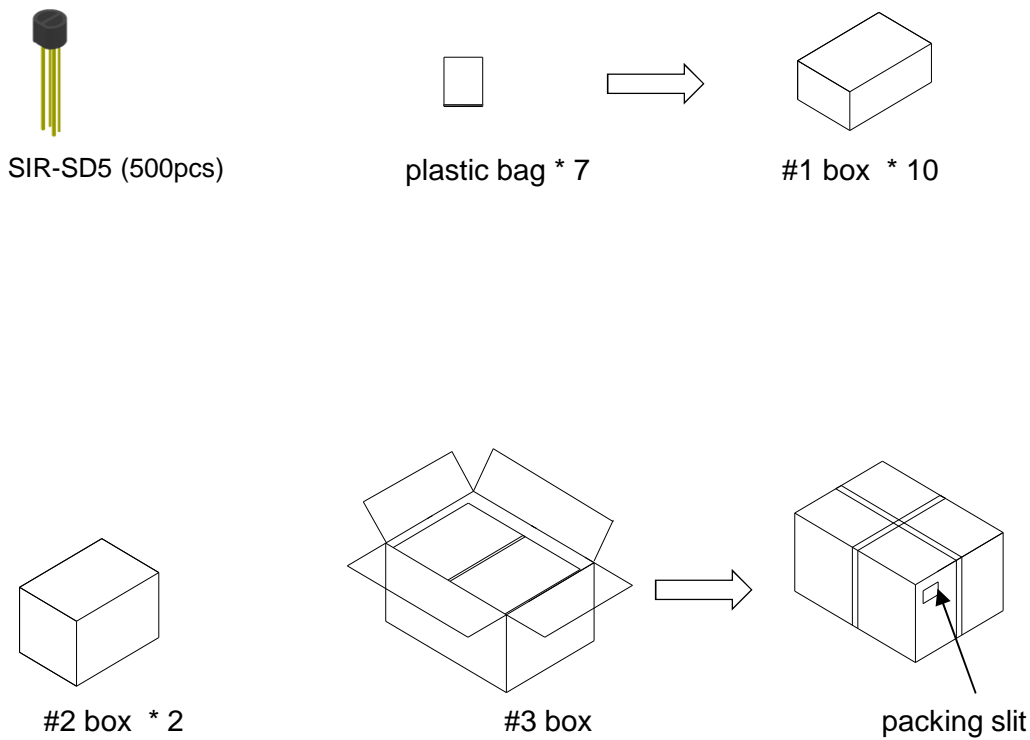


Method of measuring position detection characteristic



### Packing Specification

1. Fixed quantity (500pcs) of the products are packed into plastic bag
2. Seven bags of the products are put into #1 box
3. Ten #1 boxes are put into #2 box and two #2 boxes are put into #3 box(max 70,000pcs)
4. Packing slit is pasted on the out box



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