深圳东裕光大电子有限公司
广州市东裕光电科技有限公司

产品规格书
SPECIFICATION

客户名称 CUSTOMER	
产品名称 PRODUCTION	反射式光电开关 Reflective Sensor
产品型号 MODEL	SG-2BC(DYWH)
版本号 VERSION NO	A1.0

地址(Add)：深圳市光明区凤凰街道光明大道 481 号乐府广场 1B 栋 1609-1611 室

厂址(Add)：广东省广州市番禺区石基镇海涌路 3 号 10 号厂房 2 楼

电话(Tel)：18038161512

传真(Fax)：020-39966833

网址(Net)：www.tonyuled.cn　　www.tonyuled.com

客户确认 CUSTOMER CONFIRMATION	审　核 CHECKED BY	编　制 PREPARED BY
	周毅兴	陈少龙

1. Description

The SG-2BC is an analog output reflective sensor with a GaAs IRED and a high-sensitivity phototransistor. This sensor is designed in a mini-size, low cost package to be used in wide range of applications such as mobile application, safety equipment, and position sensor for industry.

2. Features

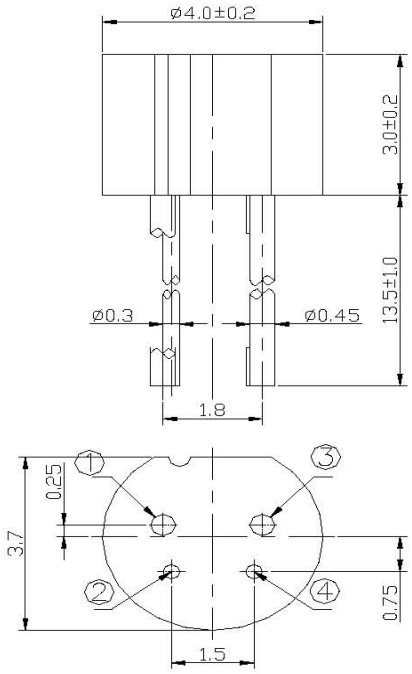
- Compact reflective photointerrupter
- Phototransistor output
- High speed response, Low optical cross-talk
- Compliant with RoHS directive

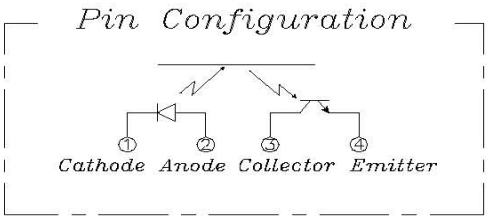
3. Applications

- Motion, proximity and edge sensing
- Mobile Phone, Digital Camera
- Printer, Optical Storage
- Industrial control, Home appliance

4. Package Outline

(ALL DIMENSIONS IN MILLIMETERS)





5. Absolute Maximum Ratings

[T_A = 25℃]

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Power Dissipation	P_D	75	mW
	Reverse Voltage	V_R	5	V
	Pulse Forward Current *1	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	BV_{CEO}	30	V
	Emitter-Collector Voltage	BV_{ECO}	3	V
Operating Temperature		Topr.	-20 ~ +60	℃
Storage Temperature		Tstg.	-30 ~ +70	℃
Soldering Temperature *2,3		Tsol	260	℃

*1. tw ≤ 100 μs, period : T = 10 ms.

*2. No icebound or dew.

*3. For MAX. 5 seconds at the position of 2 mm from the package.

6. Elector-Optical Characteristics

[T_A = 25℃]

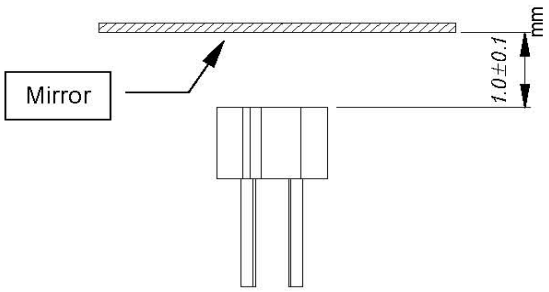
Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward Voltage	V_F	I_F = 4mA	-	-	1.2	V
	Reverse Current	I_R	V_R = 5V	-	-	10	μA
	Peak Wavelength	?P	I_F = 20mA	-	940	-	nm
Output	Collector Dark Current	I_{CEO}	V_{CE} = 10V, 0 lux	-	-	100	nA
Trans-mission	Collector Current *4,5	I_L	V_{CE}=2V,I_F=4mA, I=1mm	13	-	-	μA
	Leakage Current	I_{CEOD}	V_{CE}=2V, I_F=4mA	-	-	0.1	μA
Response Time *6	Rise Time	tr	Vcc=2V, I_C= 0.1mA	-	30	-	μs
	Fall Time	tf	R_L = 1kΩ	-	30	-	μs

*4. I_L Rank Table

No.	I_L (μA)	No.	I_L (μA)	No.	I_L (μA)
A	13 ~ 30	DA	65 ~ 110	G	320 ↑
B	25 ~ 47	DB	90 ~ 138		
CA	38 ~ 61	E	112 ~ 300		
CB	49 ~ 80	F	240 ~ 400		

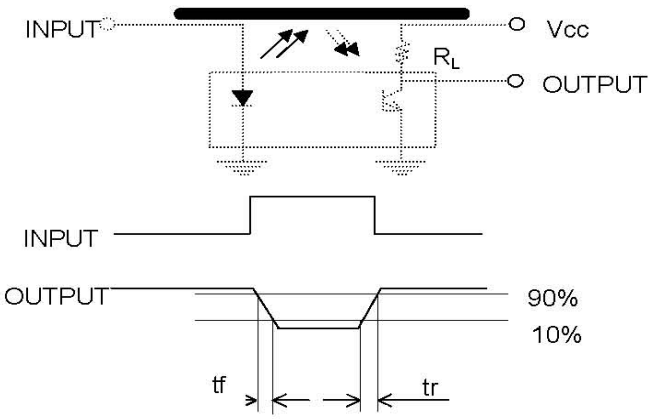
*5. Collector Current Test Method

I_C : Mirror



*6. Response Time Test Method

< Circuit for measuring response time >



7. Inspection Criteria

7-1. All of these products shall be inspected to the following items in electro-optical characteristics.

Light Current : I_L

Collector Dark Current : I_{CEO}

7-2. The other items are things that shall not particularly inspected but these products shall satisfy our standards.

8. Cautions in Usage

8-1. Store and use where there is no exterior force that will cause change in shape.

8-2. Store and use where there is no Hydrogen Sulfide gas, or any other corrosive gas.

8-3. The bending or cutting of the lead should be done at room temperature, no force being applied on the package.

8-4. Solder the lead pin under conditions of the absolute maximum rating chart, and do not apply force on the lead pin after soldering.

9. Guarantee Period and Scope

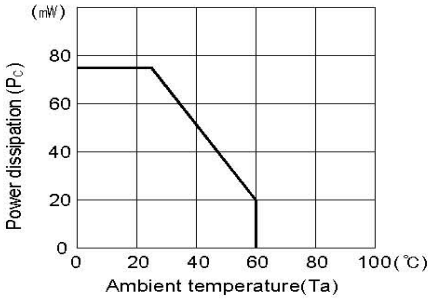
9-1. Period

One year after delivery to the desired place.

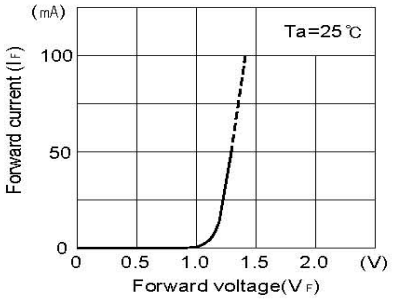
9-2. Scope

Replacement of products will be done, if any problems lie in our company's products.
However, we are not liable for your damage by lack of caution.

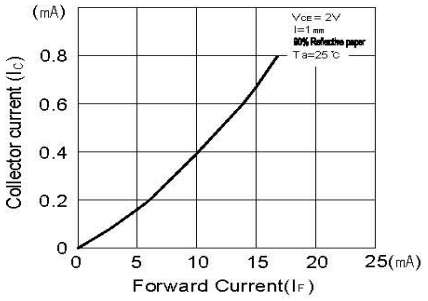
¦ Input, Output power dissipation Vs. Ambient temperature



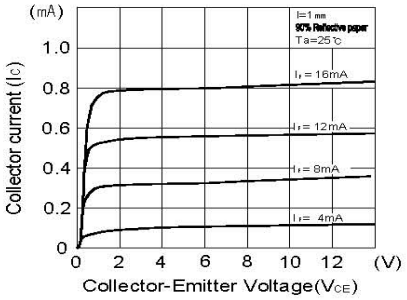
¦ Forward current Vs. Forward voltage



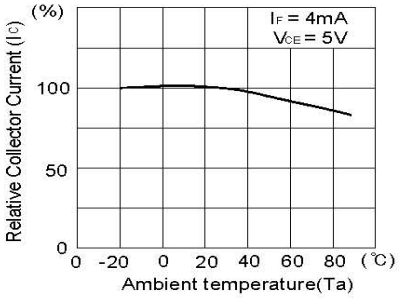
¦ Collector current Vs. Forward current



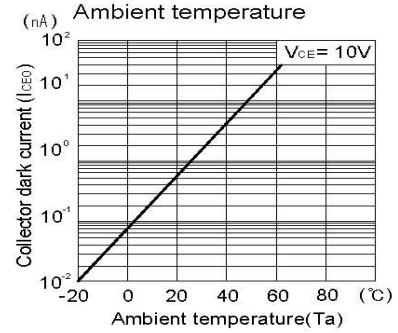
¦ Collector current Vs. Collector-Emitter voltage



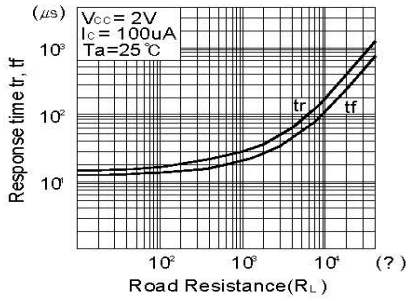
¦ Relative collector current Vs. Ambient temperature



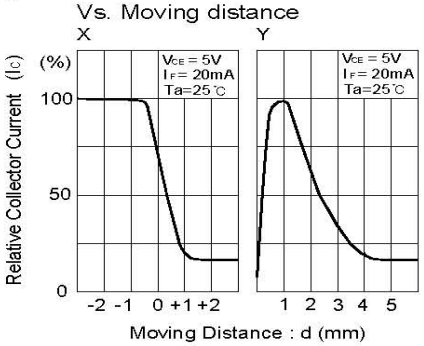
¦ Dark current Vs. Ambient temperature



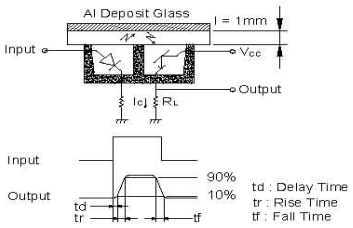
¦ Switching time Vs. Load resistance



¦ Relative Collector current Vs. Moving distance



¦ Test Circuit for Switching time



¦ Test Condition for Distance & Detecting Position Characteristics