

Photointerrupters(Reflective)

KODENSHI

SG - 107

The SG - 107 reflective sensor combines a GaAs IRED with a high - sensitivity phototransistor in a super - mini package, reducing installation space.

FEATURES

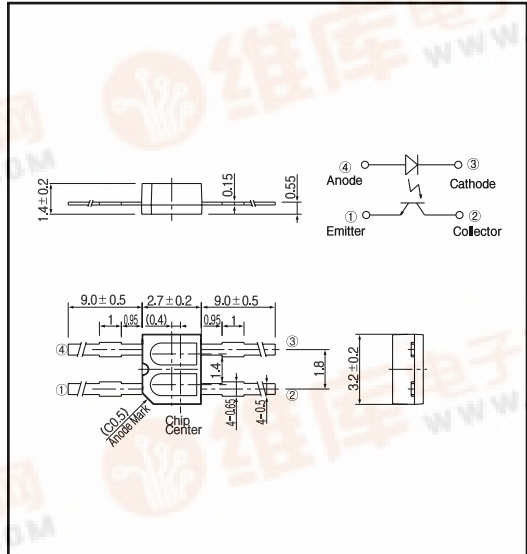
- Compact
- High performance
- High - speed response
- Easy to mount on P.C.B.
- Widely applicable

APPLICATIONS

- Timing sensors
- Edge sensors
- Micro floppy disk drives
- Level sensors of liquid

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta=25 )

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
	Pulse forward current <sup>*1</sup>	I <sub>FP</sub>	1	A
Output	Collector power dissipation	P <sub>C</sub>	50	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>	- 25 + 85		
Storage temp.	T <sub>stg.</sub>	- 30 + 100		
Soldering temp. <sup>*2</sup>	T <sub>sol.</sub>	240		

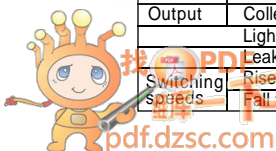
\*1. t w 100 μsec.period :T=10msec.

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

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25 )

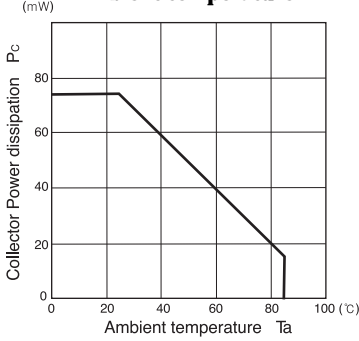
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V <sub>F</sub> I <sub>F</sub> =10mA			1.3	V
	Reverse current	I <sub>R</sub> V <sub>R</sub> =5V			10	μA
	Peak wavelength	λ <sub>p</sub>		940		nm
Output	Collector dark current	I <sub>CEO</sub> V <sub>CE</sub> =10V			0.2	μA
	Light current	I <sub>L</sub> V <sub>CE</sub> =5V, I <sub>F</sub> =4mA	35	5		μA
	Leakage current	I <sub>CEO0</sub> V <sub>CE</sub> =5V, I <sub>F</sub> =10mA			0.2	μA
Switching speeds	Rise time	t <sub>r</sub>		30		μsec.
	Fall time	t <sub>f</sub>	V <sub>CC</sub> =2V, I <sub>L</sub> =100μA, R <sub>L</sub> =1k		25	μsec.



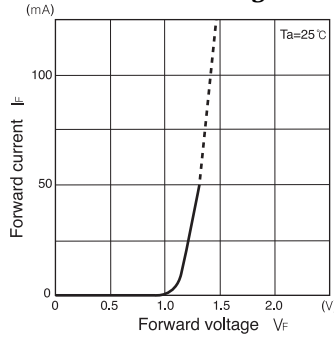
**Photointerrupters(Reflective)**

**SG - 107**

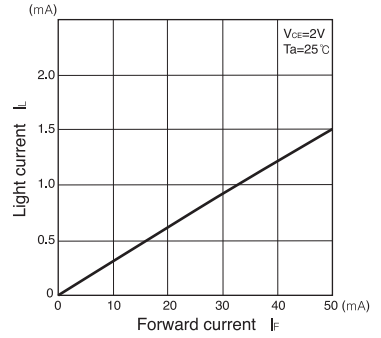
**Collector power dissipation Vs. Ambient temperature**



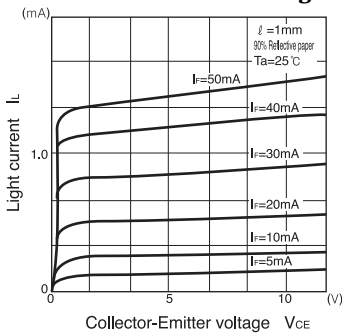
**Forward current Vs. Forward voltage**



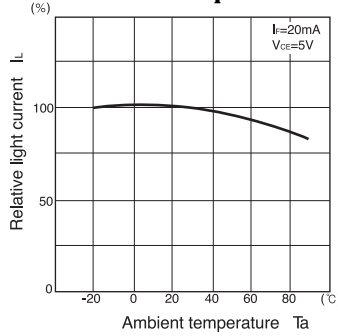
**Light current Vs. Forward current**



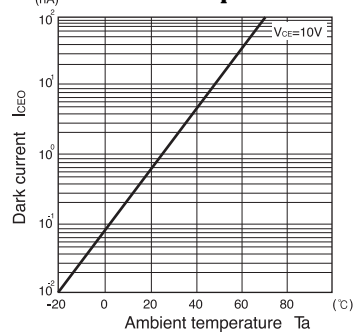
**Light current Vs. Collector-Emitter voltage**



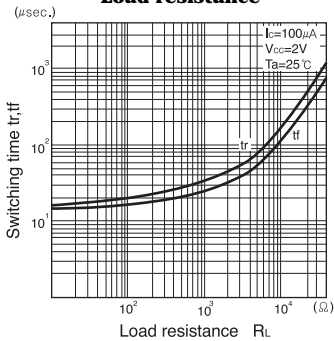
**Relative light current Vs. Ambient temperature**



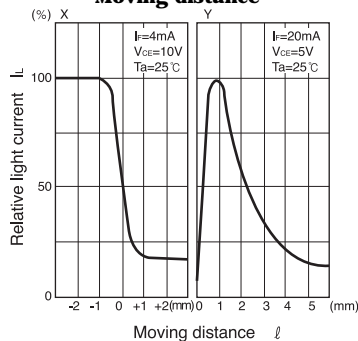
**Dark current Vs. Ambient temperature**



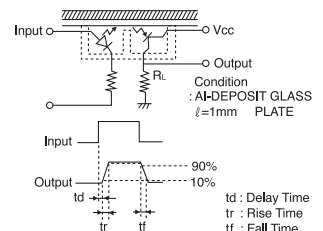
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



**Switching time measurement circuit**



**Method of measuring position characteristic**

