

Photointerrupters(Transmissive)

KODENSHI

SG - 205

The SG - 205 photointerrupter high - performance standard type, combines high - output GaAs IRED with high sensitive phototransistor.

FEATURES

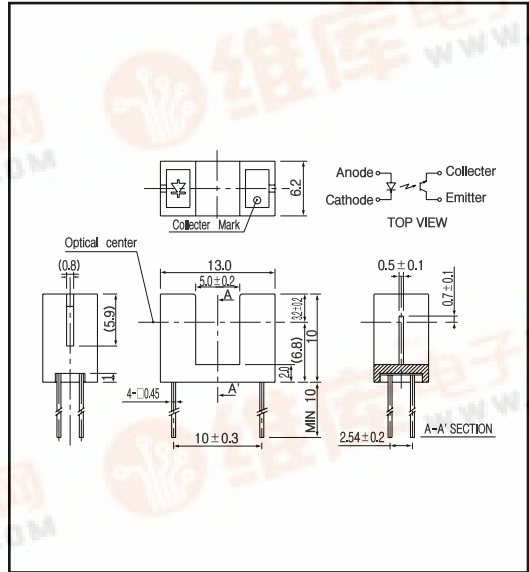
- High performance
- High - speed response
- 5mm gap.
- Widely applicable

APPLICATIONS

- Tape - end sensors
- Timing sensors
- Edge sensors
- Copiers

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta=25 )

Item	Symbol	Rating	Unit
Input	Power dissipation	P <sub>D</sub>	100 mW
	Reverse voltage	V <sub>R</sub>	5 V
	Forward current	I <sub>F</sub>	60 mA
	Pulse forward current <sup>1)</sup>	I <sub>FP</sub>	1 A
Output	Collector power dissipation	P <sub>C</sub>	100 mW
	Collector current	I <sub>C</sub>	40 mA
	C - E voltage	V <sub>CEO</sub>	30 V
	E - C voltage	V <sub>ECCO</sub>	5 V
Operating temp.	T <sub>opr.</sub>	- 20 ~ + 85	
Storage temp.	T <sub>stg.</sub>	- 30 ~ + 85	
Soldering temp. <sup>2)</sup>	T <sub>sol.</sub>	240	

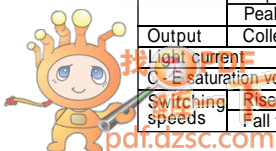
<sup>1)</sup> t w 100 μsec. period : T=10msec.

<sup>2)</sup> For MAX. 5 seconds at the position of 2mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25 )

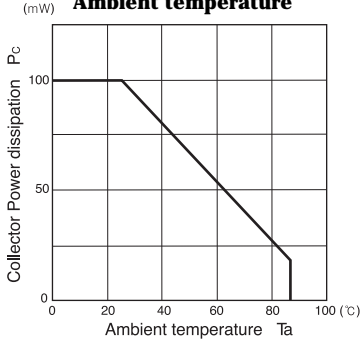
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V <sub>F</sub> I <sub>F</sub> =30mA		1.2	1.5	V
	Reverse current	I <sub>R</sub> V <sub>R</sub> =5V			10	μA
	Capacitance	C <sub>t</sub> V=0, f=1KHz		25		pF
	Peak wavelength	λ <sub>p</sub>		940		nm
Output	Collector dark current	I <sub>CEO</sub> V <sub>CE</sub> =10V			0.1	μA
Light current	I <sub>L</sub>	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA	0.5			mA
C - E saturation voltage	V <sub>CE(sat.)</sub>	I <sub>F</sub> =30mA, I <sub>C</sub> =0.2mA			0.4	V
Switching speeds	Rise time	t <sub>r</sub> V <sub>CC</sub> =5V, I <sub>C</sub> =2mA		5		μsec.
	Fall time	t <sub>f</sub> R <sub>L</sub> =100		5		μsec.



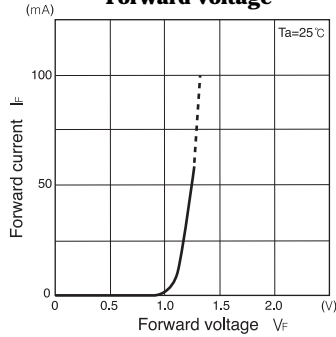
**Photo interrupters(Transmissive)**

**SG - 205**

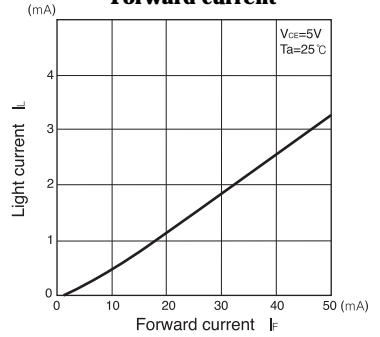
**Collector power dissipation Vs. Ambient temperature**



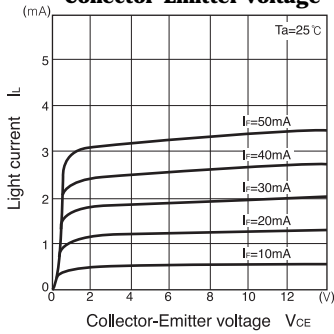
**Forward current Vs. Forward voltage**



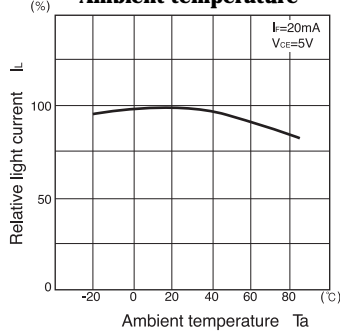
**Light current Vs. Forward current**



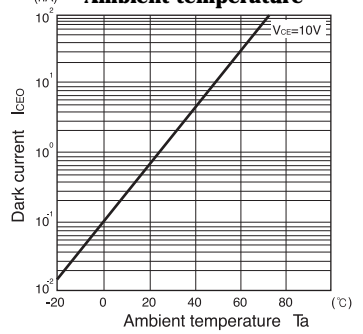
**Light current Vs. Collector-Emitter voltage**



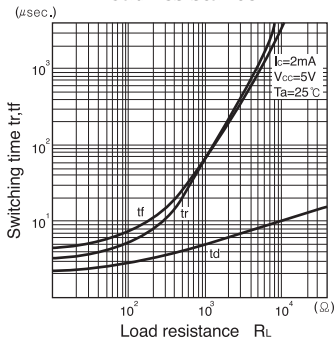
**Relative light current Vs. Ambient temperature**



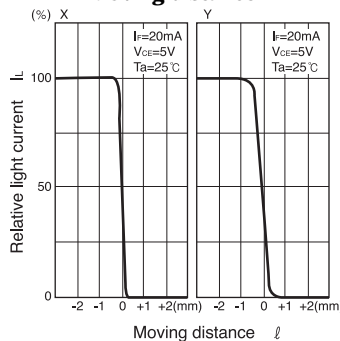
**Dark current Vs. Ambient temperature**



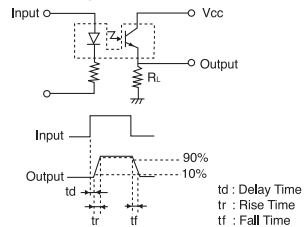
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



**Switching time measurement circuit**



**Method of measuring position characteristic**

