

# SG - 238V

The SG – 238V photointerrupter high – performance standard type, combines high – output GaAs IRED with high sensitive phototransistor.

### FEATURES

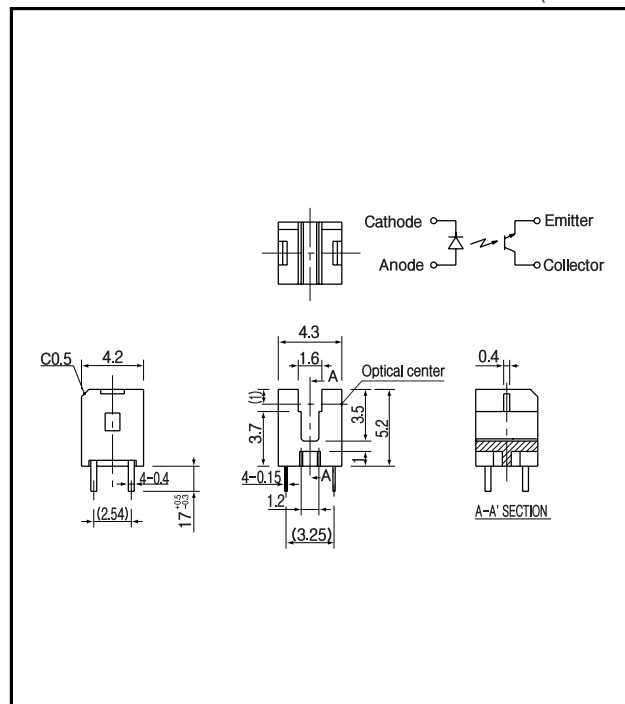
- PWB direct mount type
- GAP : 1.2mm
- Compact

### APPLICATIONS

- Cameras
- Video cameras
- Floppy disk drives
- C D – ROM drives

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25 )

Item		Symbol	Rating	Unit
Input	Power dissipation	P <sub>D</sub>	75	mW
	Forward current	I <sub>F</sub>	50	mA
	Reverse voltage	V <sub>R</sub>	5	V
	Pulse forward current <sup>*1</sup>	I <sub>FP</sub>	0.5	A
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>	5	V
Operating temp. <sup>*2</sup>		Topr.	- 20 ~ + 85	
Storage temp. <sup>*2</sup>		Tstg.	- 30 ~ + 100	
Soldering temp. <sup>*3</sup>		Tsol.	260	

\*1. pulse width : t<sub>w</sub> 100 μsec, period : T=10msec.

\*2. No icebound or dew \*3. For MAX.5 seconds at the position of 1mm from the package

### ELECTRO-OPTICAL CHARACTERISTICS

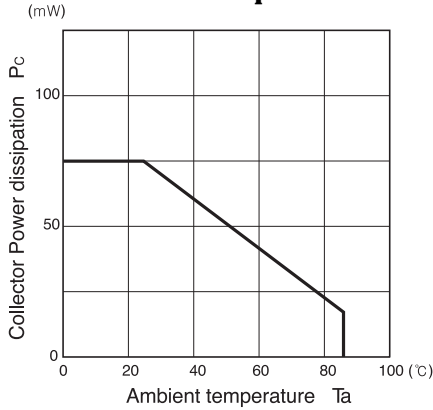
(Ta=25 )

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =5V			10	μA
	Peak wavelength	λ <sub>p</sub>	I <sub>F</sub> = 20mA		940		nm
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 10V		1	100	nA
Transmiss	Light current	I <sub>c</sub>	I <sub>F</sub> =10mA, V <sub>CE</sub> =5V, Non-shading	0.25		2.5	mA
	leakage current	I <sub>CEOD</sub>	I <sub>F</sub> =10mA, V <sub>CE</sub> =5V(shading)			10	μA
	C - E saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> =10mA, I <sub>C</sub> =0.03mA			0.4	V
Rise time		T <sub>1</sub>	V <sub>CC</sub> =4.4V, I <sub>F</sub> =15mA, R=100k			125	μsec.
Fall time		T <sub>2</sub>				1200	μsec.

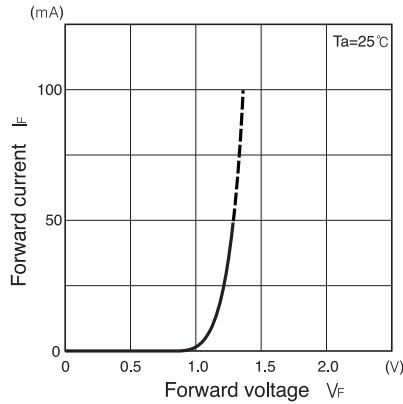
Photo interrupters(Transmissive)

**SG - 238V**

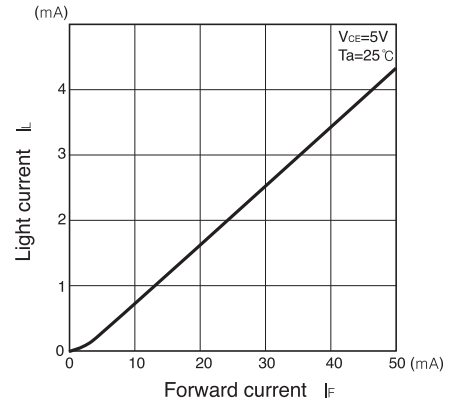
**Collector power dissipation Vs. Ambient temperature**



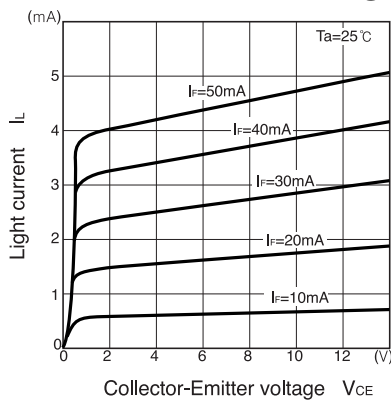
**Forward current Vs. Forward voltage**



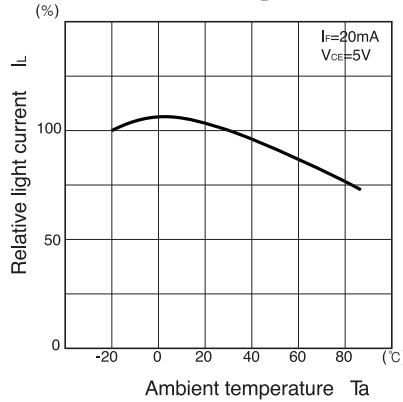
**Light current Vs. Forward current**



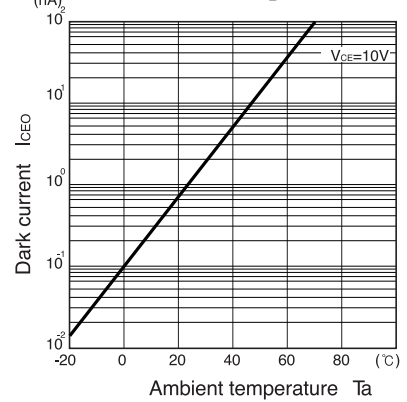
**Light current Vs. Collector-Emitter voltage**



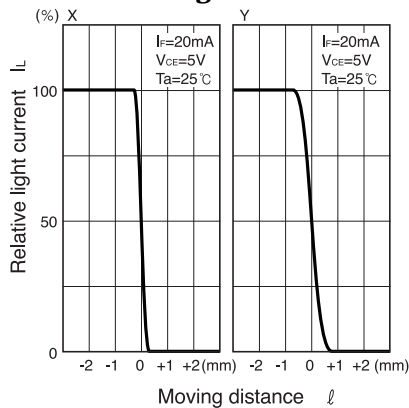
**Relative light current Vs. Ambient temperature**



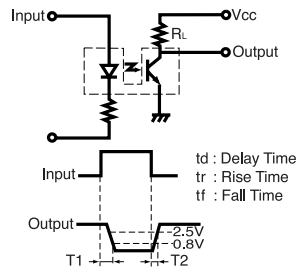
**Dark current Vs. Ambient temperature**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position detection characteristic

