

# SG - 240

The SG – 240 photointerrupter high – performance standard type,combines high – output GaAs IRED with high sensitive phototransistor.

**FEATURES**

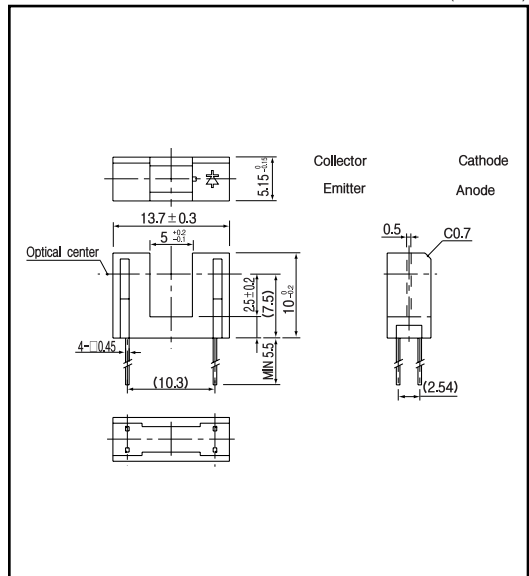
- PWB direct mount type
- GAP : 5.0mm

**APPLICATIONS**

- CD changers
- Reel rotation detection
- VTR
- Amusement machines

**DIMENSIONS**

(Unit : mm)



**MAXIMUM RATINGS**

(Ta=25 )

	Item	Symbol	Rating	Unit
Input	Power dissipation	P <sub>D</sub>	100	mW
	Forward current	I <sub>F</sub>	60	mA
	Reverse voltage	V <sub>R</sub>	5	V
	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>ECO</sub>	5	V
	Operating temp. <sup>*2</sup>	T <sub>opr.</sub>	- 20 ~ +85	
	Storage temp. <sup>*2</sup>	T <sub>stg.</sub>	- 30 ~ +85	
	Soldering temp. <sup>*3</sup>	T <sub>sol.</sub>	260	

\*1. pulse width : t w 100 ꝑec,period : T=10msec.

\*2. No icebound or dew

\*3. For MAX.5 seconds at the position of 1mm from the package

**ELECTRO-OPTICAL CHARACTERISTICS**

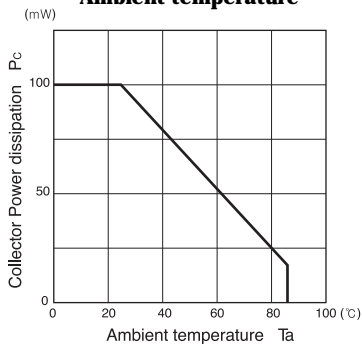
(Ta=25 )

	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	ꝑA
	Peak wavelength	p	I <sub>F</sub> =20mA		940		nm
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> =10V		1	100	nA
	Light current	I <sub>C</sub>	I <sub>F</sub> =20mA, V <sub>ES</sub> =5V,Non-shading	0.5		10	mA
Transmissi	leakage current	I <sub>CEO0</sub>	I <sub>F</sub> =20mA, V <sub>ES</sub> =5V(shading)		0.50	10	ꝑA
	C - E saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> =20mA, I <sub>C</sub> =0.1mA		0.15	0.4	V
	Rise time	t <sub>r</sub>	V <sub>CC</sub> =5V, I <sub>C</sub> =2mA, R=100		4		ꝑsec.
	Fall time	t <sub>f</sub>			5		ꝑsec.

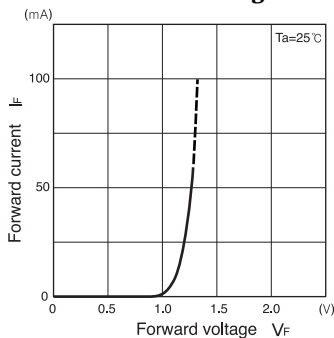
Photo interrupters(Transmissive)

SG - 240

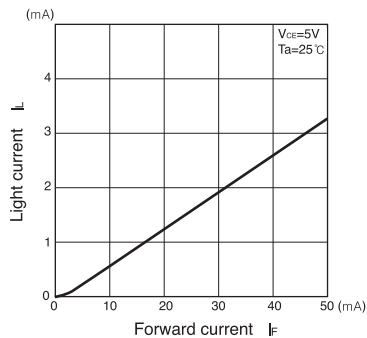
**Collector power dissipation Vs. Ambient temperature**



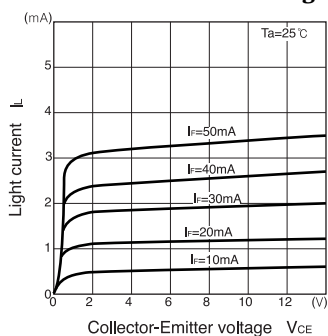
**Forward current Vs. Forward voltage**



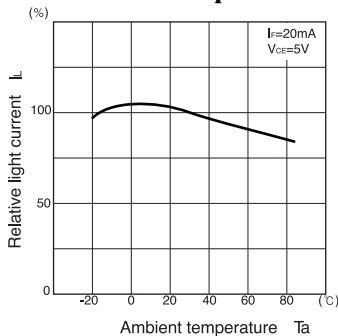
**Light current Vs. Forward current**



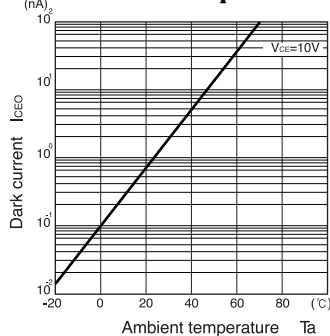
**Light current Vs. Collector-Emitter voltage**



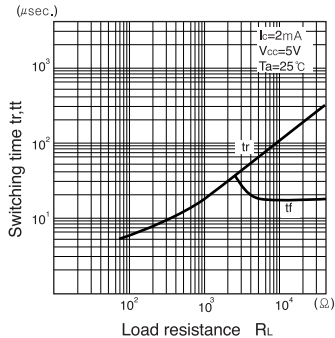
**Relative light current Vs. Ambient temperature**



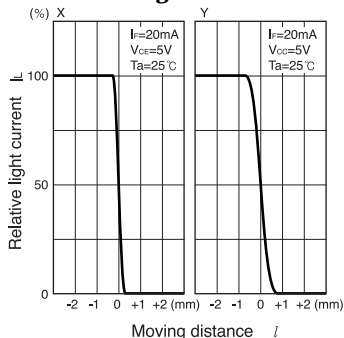
**Dark current Vs. Ambient temperature**



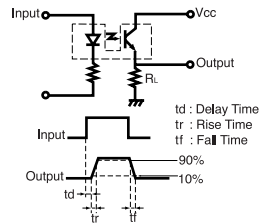
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position detection characteristic

