

SG - 223

The SG - 223 is a photointerrupter consisting of GaAs IRED and phototransistor.

**FEATURES**

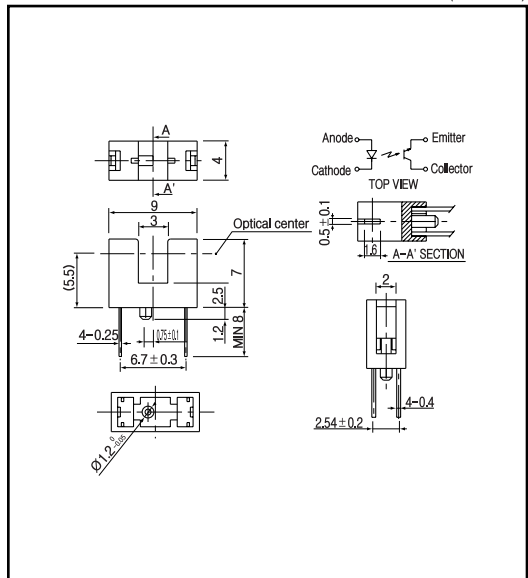
- 0.4mm aperture
- Easy to mount on P.C.B.
- Very compact

**APPLICATIONS**

- Floppy disk drives
- Camera

**DIMENSIONS**

(Unit : mm)



**MAXIMUM RATINGS**

(Ta=25 °C)

Item	Symbol	Rating	Unit	
Input	Power dissipation	$P_D$	75	mW
	Reverse voltage	$V_R$	5	V
	Forward current	$I_F$	50	mA
	Pulse forward current <sup>*1</sup>	$I_{FP}$	1	A
Output	Collector power dissipation	$P_C$	75	mW
	Collector current	$I_C$	20	mA
	C - E voltage	$V_{CEO}$	30	V
	E - C voltage	$V_{ECO}$	5	V
	Operating temp.	$T_{opr.}$	- 25 ~ +85	
	Storage temp.	$T_{stg.}$	- 30 ~ +85	
	Soldering temp. <sup>*2</sup>	$T_{sol.}$	260	

\*1. t w 100 μsec.period :T=10msec.

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

**ELECTRO-OPTICAL CHARACTERISTICS**

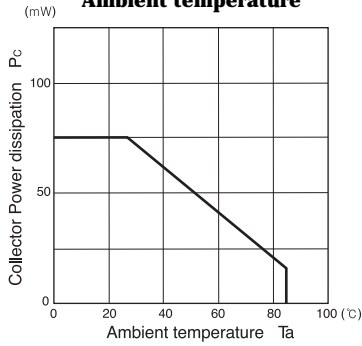
(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	$V_F$	$I_F=20mA$	1.2	1.4	V
	Reverse current	$I_R$	$V_R=5V$		10	μA
	Capacitance	$C_t$	$V=0, f=1KHz$		25	pF
	Peak wavelength	$\lambda$		940		nm
Output	Collector dark current	$I_{CEO}$	$V_{CE}=10V$		0.1	μA
Light current	$I_L$	$V_{CE}=5V, I_F=20mA$	0.7		14	mA
C - E saturation voltage	$V_{CE(sat)}$	$I_F=20mA, I_C=0.1mA$		0.15	0.4	V
Switching speeds	Rise time	$t_r$	$V_{CC}=5V, I_C=0.5mA$	10		μsec.
	Fall time	$t_f$	$R_L=100$	10		μsec.

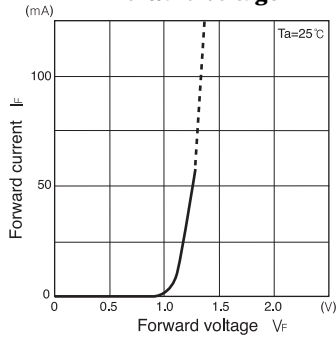
Photo interrupters(Transmissive)

SG - 223

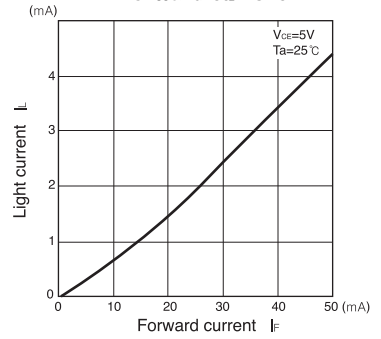
**Collector power dissipation Vs. Ambient temperature**



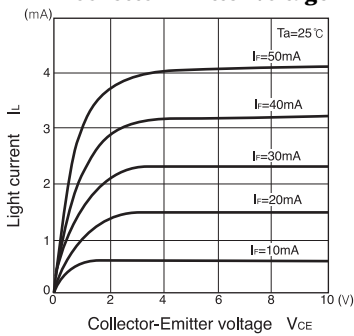
**Forward current Vs. Forward voltage**



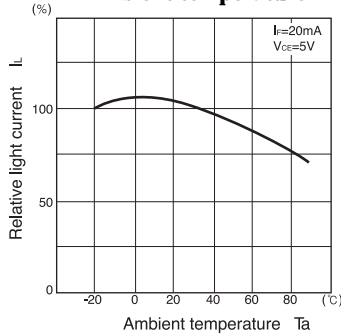
**Light current Vs. Forward current**



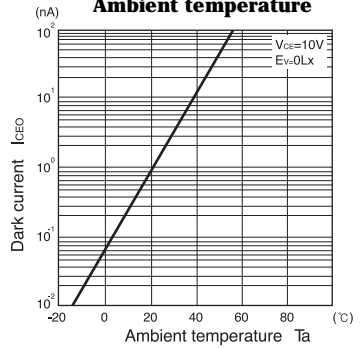
**Light current Vs. Collector-Emitter voltage**



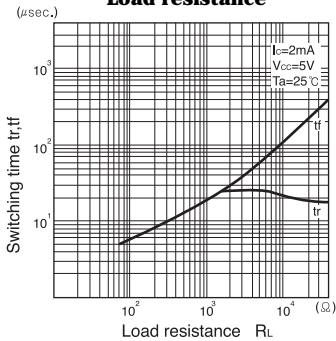
**Relative light current Vs. Ambient temperature**



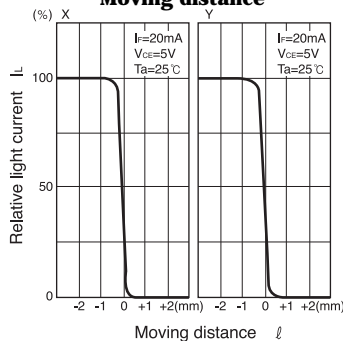
**Dark current Vs. Ambient temperature**



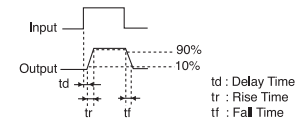
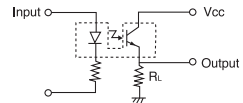
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position characteristic

