

**SG - 23FF · SG - 23FH · SG - 23FI · SG - 23FT**

The SG - 23FF, 23FH, 23FI, and 23FT photointerrupters high - performance standard type, combine high - output GaAs IRED with high sensitive phototransistor.

**FEATURES**

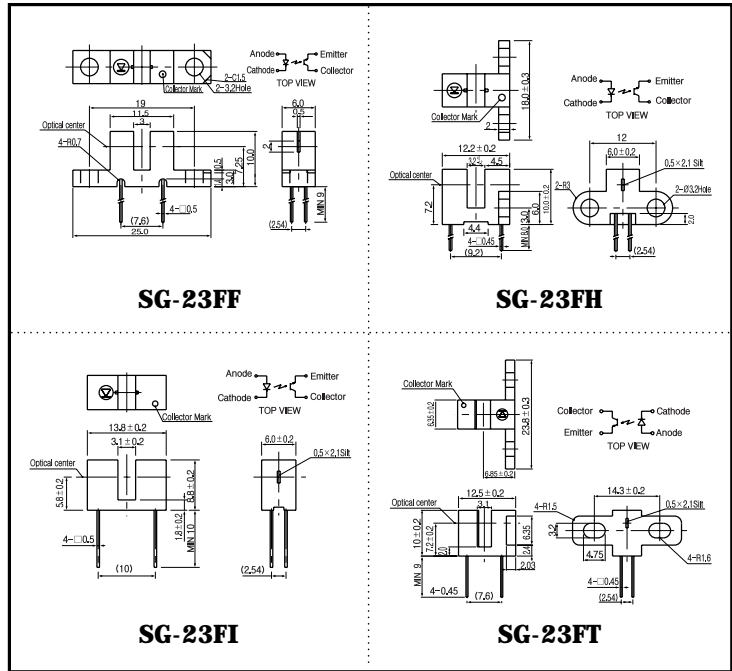
- 0.5mm aperture
- High - speed response
- Easy to mount on P.C.B.
- Widely applicable

**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>ECO</sub>	5	V
Operating temp.		Topr.	- 20 ~ +85	
Storage temp.		Tstg.	- 30 ~ +85	
Soldering temp. <sup>*2</sup>		Tsol.	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**

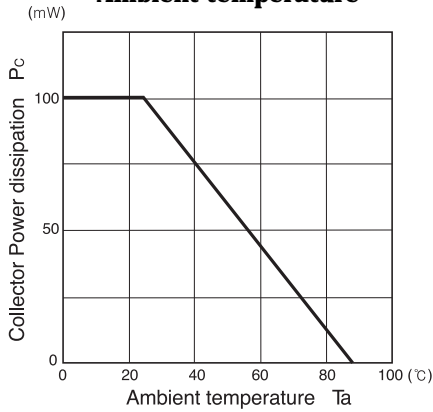
(Ta=25 )

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =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	0.3			mA
C - E saturation voltage		V <sub>CE(sat)</sub>	I <sub>F</sub> =30mA, I <sub>c</sub> =0.1mA			0.4	V
Switching speeds	Rise time	t <sub>r</sub>	V <sub>CC</sub> =5V, I <sub>b</sub> =2mA		5		μsec.
	Fall time	t <sub>f</sub>	R <sub>L</sub> =100		5		μsec.

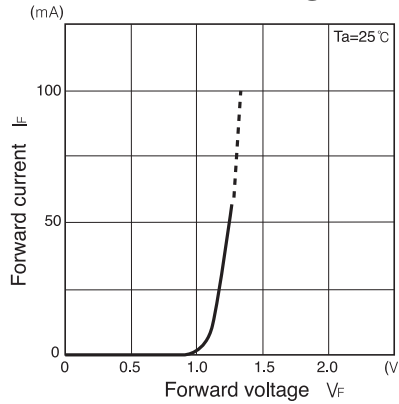
Photo interrupters(Transmissive)

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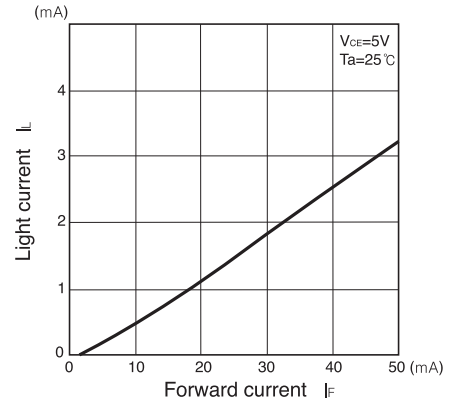
**Collector power dissipation Vs. Ambient temperature**



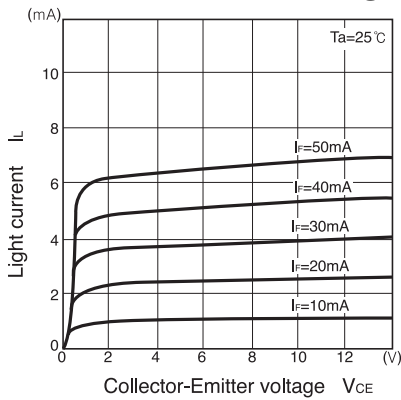
**Forward current Vs. Forward voltage**



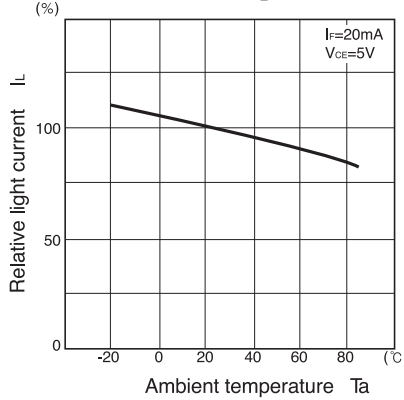
**Light current Vs. Forward current**



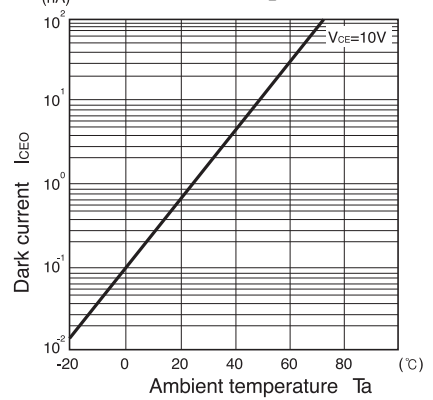
**Light current Vs. Collector-Emitter voltage**



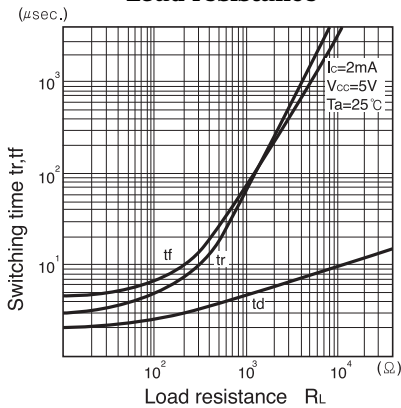
**Relative light current Vs. Ambient temperature**



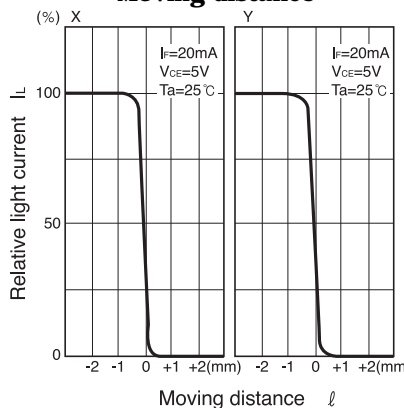
**Dark current Vs. Ambient temperature**



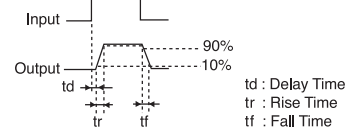
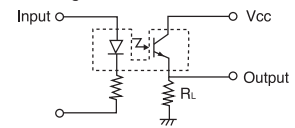
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position characteristic

