

SG - 103

The SG - 103 reflective sensor for paper sensing combine high - output GaAs IRED with high sensitivity phototransistor. It is most applicable to paper sensor.

**FEATURES**

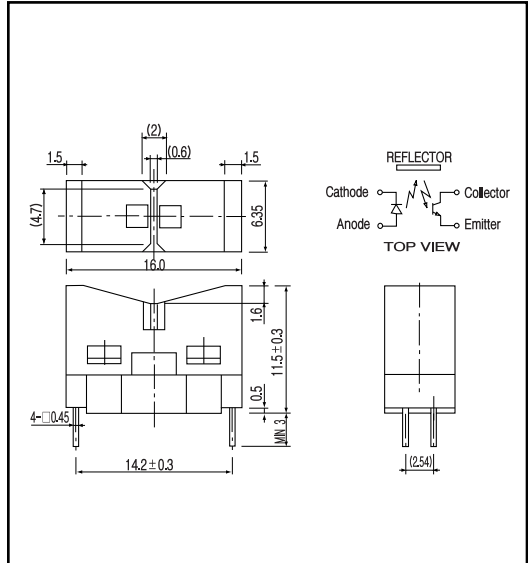
- High performance
- High - speed response
- Dust proof

**APPLICATIONS**

- Copiers
- Facsimiles
- Edge sensors

**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.	T <sub>opr.</sub>	- 20 ~ +85	
	Storage temp.	T <sub>stg</sub>	- 30 ~ +85	
	Soldering temp. <sup>*2</sup>	T <sub>sol.</sub>	240	

\*1. t w 100 ꝑsec.period :T=10msec.

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

**ELECTRO-OPTICAL CHARACTERISTICS**

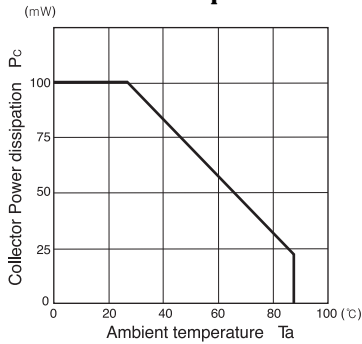
(Ta=25 )

	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	ꝑA
	Capacitance	C <sub>t</sub>	V=0V, f=1KHz		25		pF
	Peak wavelength	ꝑ			940		nm
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> =10V			0.1	ꝑA
	Ligh current	I <sub>L</sub>	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA	100			ꝑA
	Leakage current	I <sub>CEO0</sub>	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA			10	ꝑA
Switching speeds	Rise time	t <sub>r</sub>	V <sub>CC</sub> =5V, I <sub>C</sub> =100ꝑA		30		ꝑsec.
	Fall time	t <sub>f</sub>	R <sub>L</sub> =1K		30		ꝑsec.

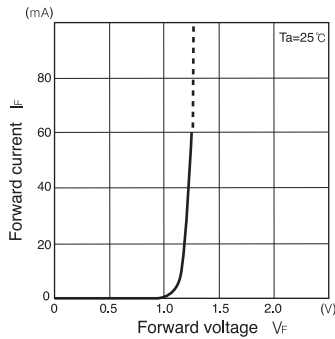
Photointerrupters(Reflective)

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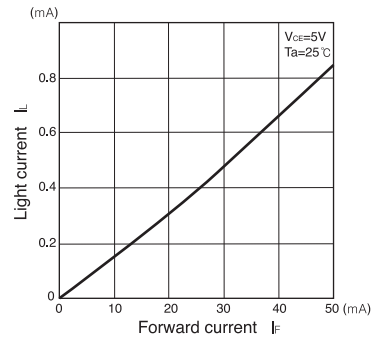
**Collector power dissipation Vs. Ambient temperature**



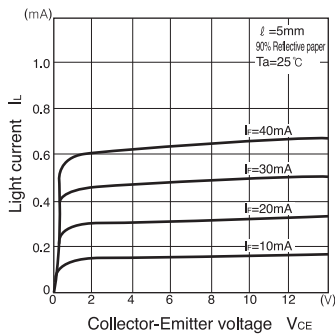
**Forward current Vs. Forward voltage**



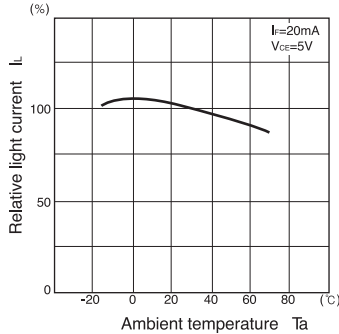
**Light current Vs. Forward current**



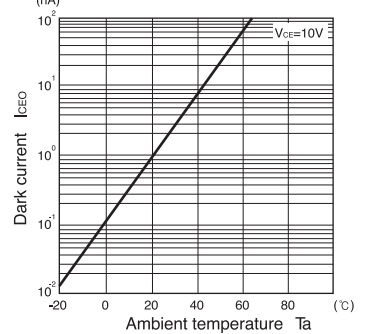
**Light current Vs. Collector-Emitter voltage**



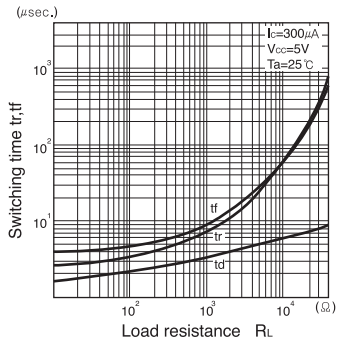
**Relative light current Vs. Ambient temperature**



**Dark current Vs. Ambient temperature**



**Switching time Vs. Load resistance**



Switching time measurement circuit

