

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

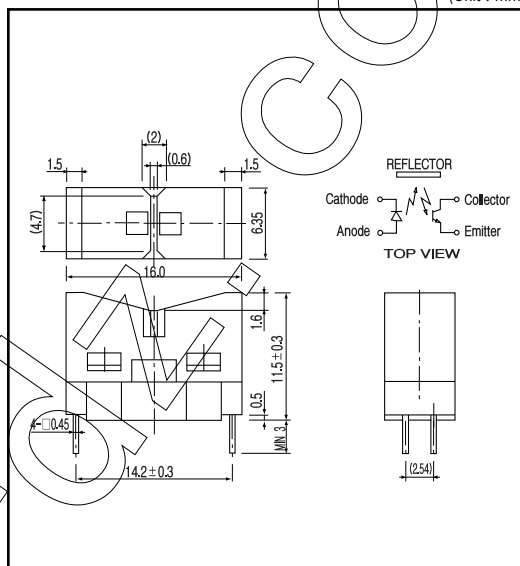
- High performance
- High - speed response
- Dust proof

APPLICATIONS

- Copiers
- Facsimiles
- Edge sensors

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta = 25°C)

	Item	Symbol	Rating	Unit
Input	Power dissipation	P_D	100	mW
	Reverse voltage	V_R	5	V
	Forward current	I_F	60	mA
	Pulse forward current ^{*1}	I_{FP}	1	A
Output	Collector power dissipation	P_C	100	mW
	Collector current	I_C	40	mA
	C - E voltage	V_{CE0}	30	V
	E - C voltage	V_{ECO}	5	V
	Operating temp.	$T_{opr.}$	- 20 ~ +85	°C
	Storage temp.	T_{stg}	- 30 ~ +85	°C
	Soldering temp. ^{*2}	$T_{sol.}$	240	°C

*1. $t_w \leq 100$ μ sec. period : $T = 10$ msec.

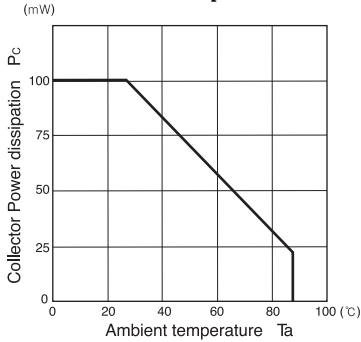
*2. For MAX. 5 seconds at the position of 2mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

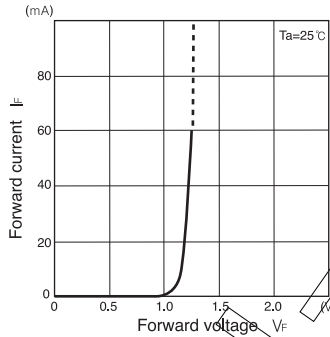
(Ta = 25°C)

	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V_F	$I_F = 30$ mA		1.2	1.5	V
	Reverse current	I_R	$V_R = 5$ V			10	μ A
	Capacitance	C_t	$V = 0$ V, $f = 1$ KHz		25		pF
	Peak wavelength	λ_p			940		nm
Output	Collector dark current	I_{CE0}	$V_{CE} = 10$ V			0.1	μ A
	Light current	I_L	$V_{CE} = 5$ V, $I_F = 20$ mA	100			μ A
	Leakage current	I_{CE0D}	$V_{CE} = 5$ V, $I_F = 20$ mA			10	μ A
	Switching speeds		$V_{CC} = 5$ V, $k = 100$ μ A				
	Rise time	t_r	$R_L = 1$ K Ω		30		μ sec.
	Fall time	t_f			30		μ sec.

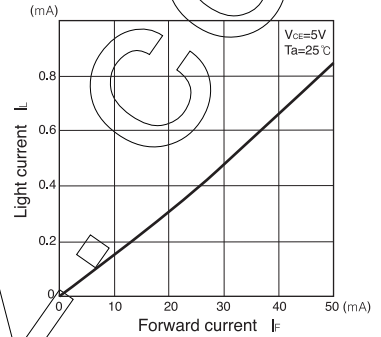
Collector power dissipation Vs. Ambient temperature



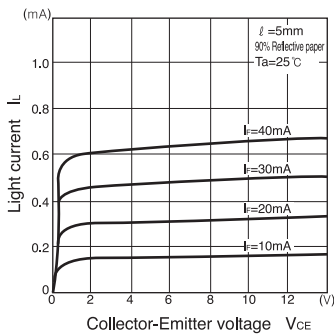
Forward current Vs. Forward voltage



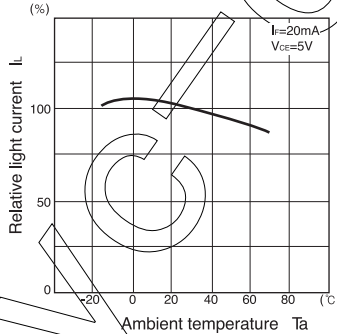
Light current Vs. Forward current



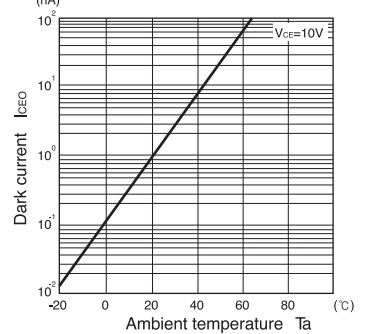
Light current Vs. Collector-Emitter voltage



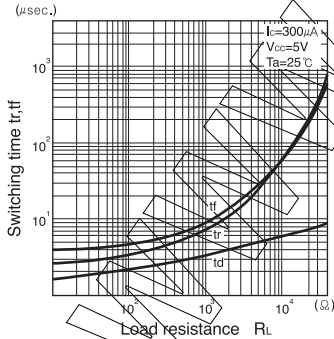
Relative light current Vs. Ambient temperature



Dark current Vs. Ambient temperature



Switching time Vs. Load resistance



Switching time measurement circuit

