

# SG - 107F4

The SG – 107F4 reflective sensor combines a GaAs IRED with a high - sensitivity phototransistor in a super - mini package, reducing installation space.

## FEATURES

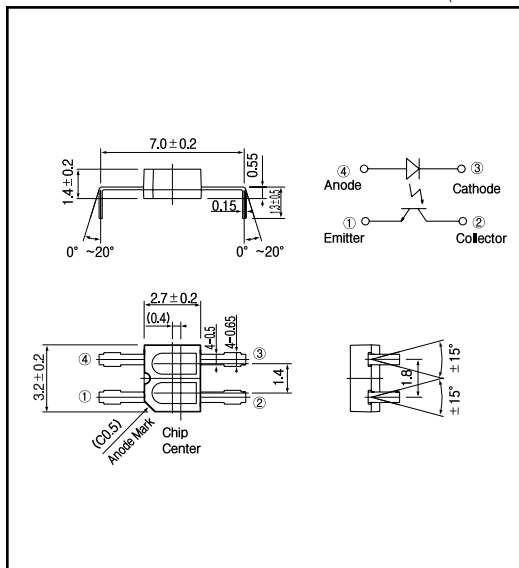
- PWB direct mount type
- The most suitable detection distance : 0.8mm
- Visible light cut off type
- Low profile

## APPLICATIONS

- Cassette mecha
- Cameras
- Mini printers
- VTR

## DIMENSIONS

(Unit : mm)



## MAXIMUM RATINGS

(Ta=25 )

	Item	Symbol	Rating	Unit
Input	Power dissipation	$P_D$	75	mW
	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	5	V
	Pulse forward current	$I_{FP}$	-	A
Output	Collector power dissipation	$P_C$	50	mW
	Collector current	$I_C$	20	mA
	C - E voltage	$V_{CEO}$	30	V
	E - C voltage	$V_{ECO}$	5	V
	Operating temp. <sup>*1</sup>	$T_{opr.}$	- 20 ~ +85	
	Storage temp. <sup>*1</sup>	$T_{stg.}$	- 30 ~ +100	
	Soldering temp. <sup>*2</sup>	$T_{sol.}$	240	

\*1. No icebound dew

\*2. For MAX. 5 second at the position of 1mm from the package

## ELECTRO-OPTICAL CHARACTERISTICS

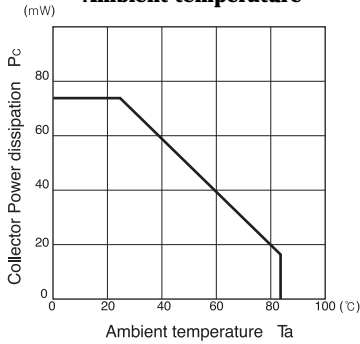
(Ta=25 )

	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	$V_F$	$I_F = 10mA$			1.3	V
	Reverse current	$I_R$	$V_R = 5V$			10	$\mu A$
	Peak wavelength	$\lambda_p$	$I_F = 20mA$		940		nm
Output	Collector dark current	$I_{CEO}$	$V_{CE} = 10V$			0.2	$\mu A$
	Light current	$I_C$	$I_F = 4mA, V_E = 5V$	35		200	$\mu A$
Transmission	Leakage current	$I_{CEO}$	$I_F = 10mA, V_E = 5V$			0.2	$\mu A$
	Rise time	$t_r$	$V_{CC} = 2V, I_C = 0.1mA, R = 1k$		30		$\mu sec.$
	Fall time	$t_f$	$V_{CC} = 2V, I_C = 0.1mA, R = 1k$		25		$\mu sec.$

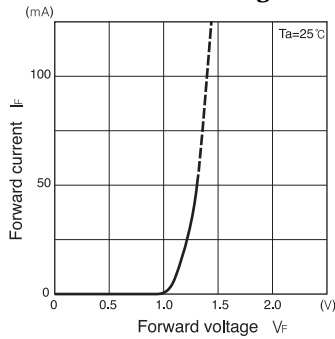
Photo interrupters(Reflective)

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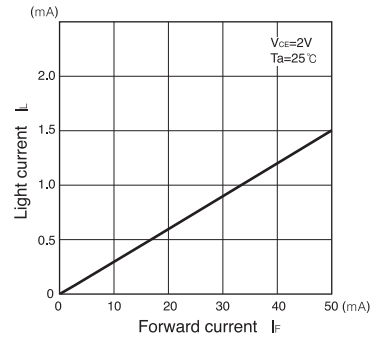
**Collector power dissipation Vs. Ambient temperature**



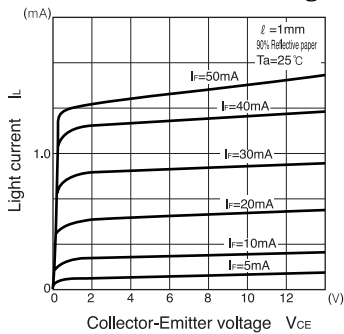
**Forward current Vs. Forward voltage**



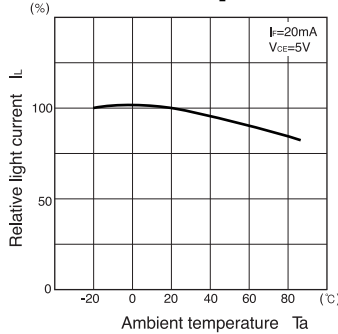
**Light current Vs. Forward current**



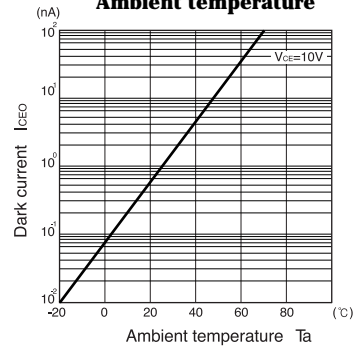
**Light current Vs. Collector-Emitter voltage**



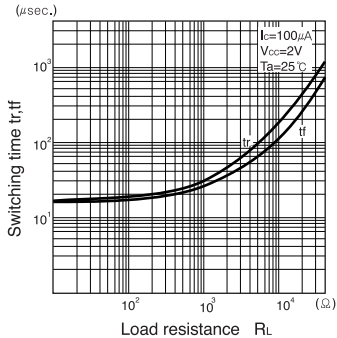
**Relative light current Vs. Ambient temperature**



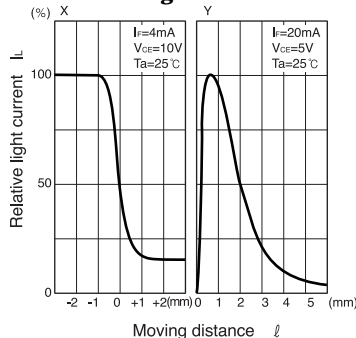
**Dark current Vs. Ambient temperature**



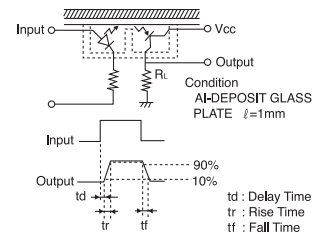
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position detection characteristic

