

# GP1S07 Subminiature Photointerrupter

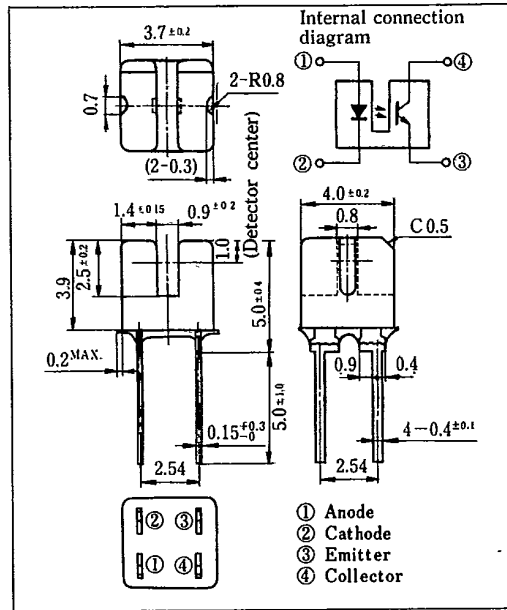
## ■ Features

1. Ultra-compact (Capacity: 0.06cc) and light
2. PWB mounting type package
3. High sensing accuracy (Slit width: 0.8mm)

## ■ Applications

1. Still camera
2. Miniprinter
3. Microfloppy disk
4. Compact equipment

## ■ Outline Dimensions (Unit: mm)



## ■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Input	Forward current	$I_F$	50 mA
	Reverse voltage	$V_R$	6 V
	Power dissipation	$P$	75 mW
Output	Collector-emitter voltage	$V_{CEO}$	35 V
	Emitter-collector voltage	$V_{ECO}$	6 V
	Collector current	$I_C$	20 mA
	Collector power dissipation	$P_C$	75 mW
Total power dissipation	$P_{tot}$	100 mW	
Operating temperature	$T_{opr}$	-25 ~ +85	°C
Storage temperature	$T_{stg}$	-40 ~ +100	°C
*1 Soldering temperature	$T_{sol}$	260	°C

\*1 For 3 seconds

T-41-73

Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	$V_F$	$I_F=20\text{mA}$	—	1.2	1.4	V
	Reverse current	$I_R$	$V_R=3\text{V}$	—	—	10	$\mu\text{A}$
Output	Collector dark current	$I_{CDO}$	$V_{CE}=20\text{V}$	—	—	$10^{-7}$	A
Transfer characteristics	Current transfer ratio	CTR	$I_F=1.5\text{mA}, V_{CE}=5\text{V}$	4.3	7.3	13.3	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=3\text{mA}, I_C=30\mu\text{A}$	—	0.08	0.4	V
	Response time (Rise)	$t_r$	$I_C=0.1\text{mA}, V_{CE}=5\text{V}, R_L=$	—	50	150	$\mu\text{s}$
	Response time (Fall)	$t_f$	$1\text{k}\Omega$	—	50	150	$\mu\text{s}$

Fig. 1 Forward Current vs. Ambient Temperature

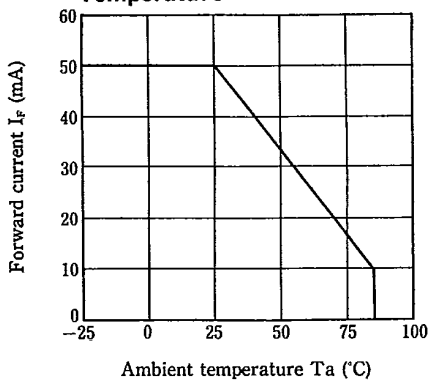


Fig. 2 Power Dissipation vs. Ambient Temperature

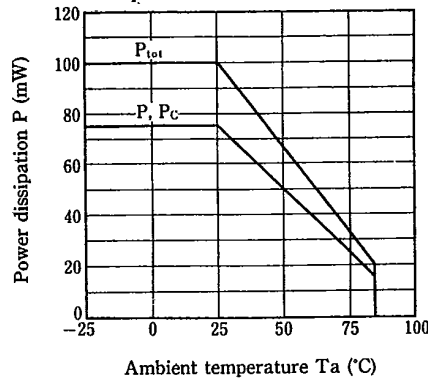


Fig. 3 Forward Current vs. Forward Voltage

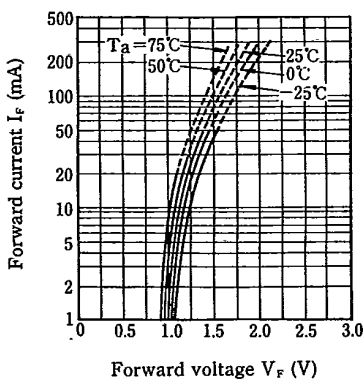
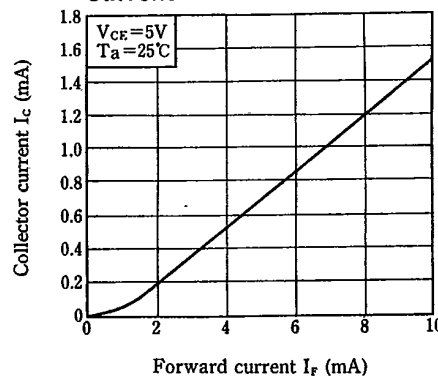
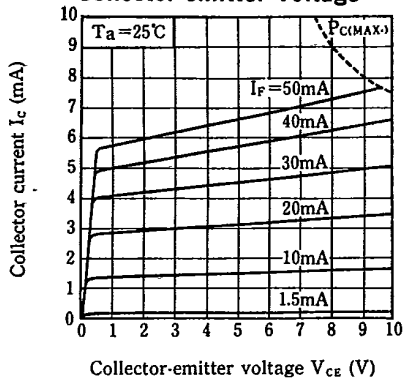


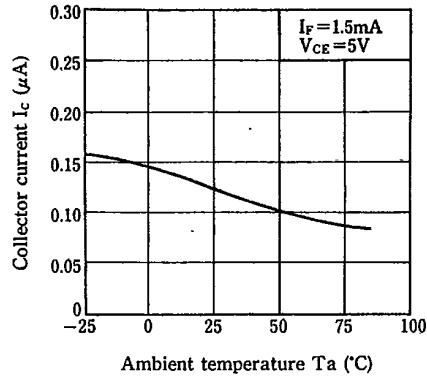
Fig. 4 Collector Current vs. Forward Current



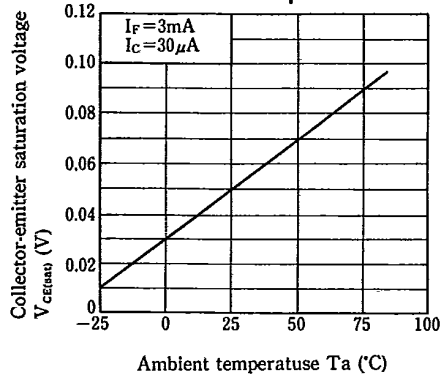
**Fig. 5 Collector Current vs. Collector-emitter Voltage**



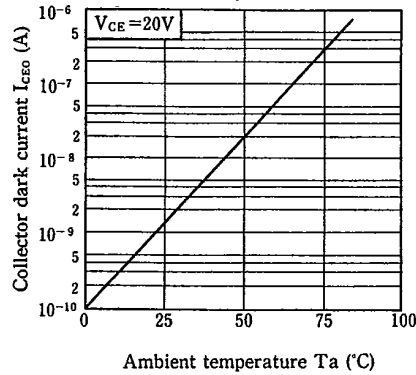
**Fig. 6 Collector Current vs. Ambient Temperature**



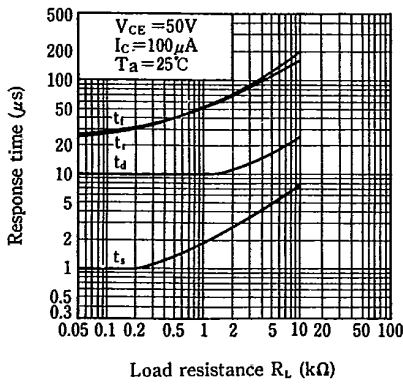
**Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature**



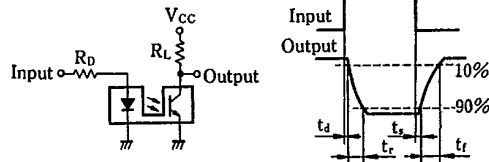
**Fig. 8 Collector Dark Current vs. Ambient Temperature**



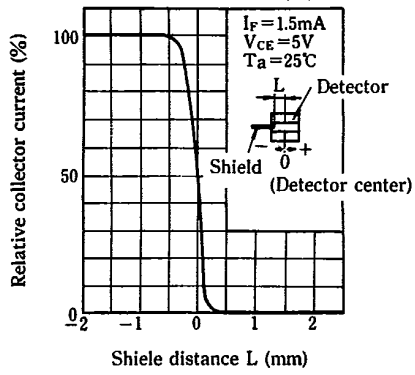
**Fig. 9 Response Time vs. Load Resistance**



**Test Circuit for Response Time**



**Fig. 10 Relative Collector Current vs. Shield Distance (1)**



**Fig. 11 Relative Collector Current vs. Shield Distance (2)**

