

# GP1S06

## High Sensing Accuracy Type Photointerrupter

### ■ Features

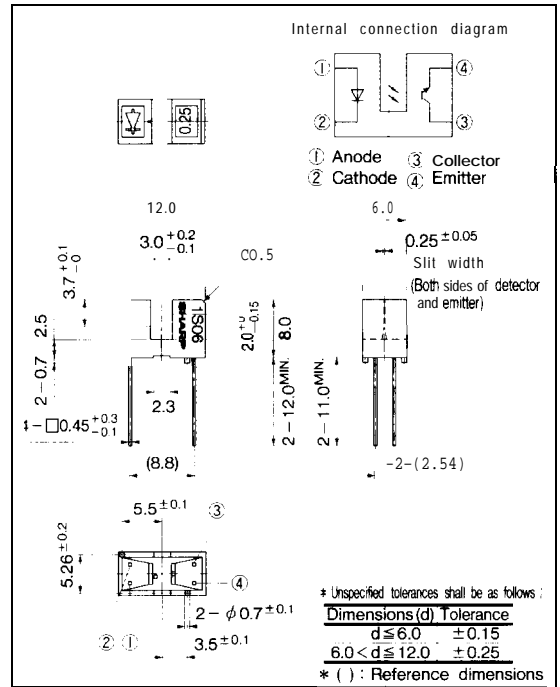
1. High sensing accuracy  
(Slit width :0.25mm)
2. PWB direct mounting type package

### ■ Applications

1. Floppy disk drives
2. Copiers, printers, facsimiles
3. Optoelectronic switches, optoelectronic counters

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	*1 Peak forward current	I <sub>FM</sub>	1	A
	Reverse voltage	V <sub>R</sub>	6	V
	Power dissipation	P	75	mW
output	Collector -emitter voltage	V <sub>CEO</sub>	35	v
	Emitter -collector voltage	V <sub>ECO</sub>	6	v
	Collector current	I <sub>C</sub>	20	mA
	Collector power dissipation	P <sub>C</sub>	75	mW
Operating temperature		T <sub>opr</sub>	-25 to +85	°C
Storage temperature		T <sub>stg</sub>	--40 to +100	°C
*2 Soldering temperature		T <sub>sol</sub>	260	°C

\*1 Pulse width ≤ 100 μs, Duty ratio= 0.01

\*2 For 5 seconds

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		
	Peak forward voltage	$V_{FM}$	$I_{FM}=0.5\text{A}$	—	3	4	V		
	Reverse current	$I_R$	$V_R=3\text{V}$	—	—	10	$\mu\text{A}$		
output	Collector dark current	$I_{CEO}$	$V_{CE}=20\text{V}$	—	1	100	nA		
	Current transfer ratio	CTR	$V_{CE}=5\text{V}, I_F=20\text{mA}$	0.5	—	12.5	%		
Transfer charac- teristics	Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_F=40\text{mA}, I_C=50\mu\text{A}$		—	—	0.4	V
	Response time	Rise time	$t_r$	$V_{CE}=2\text{V}, I_C=0.5\text{mA}, R_L=1\text{k}\Omega$		—	38	90	$\mu\text{s}$
		Fall time	$t_f$			—	48	110	$\mu\text{s}$

Fig. 1 Forward Current vs. Ambient Temperature

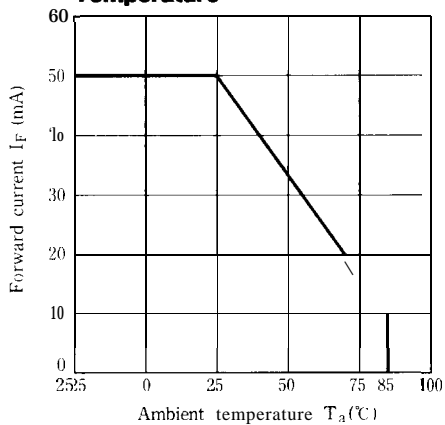


Fig. 3 Peak Forward Current vs. Duty Ratio

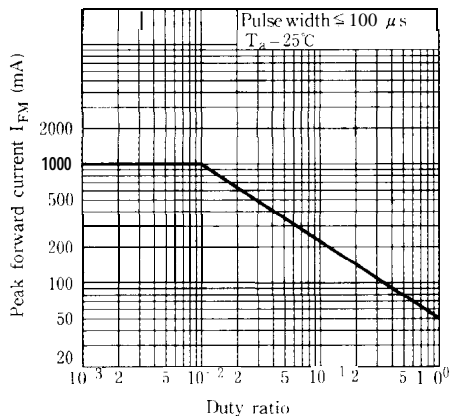


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

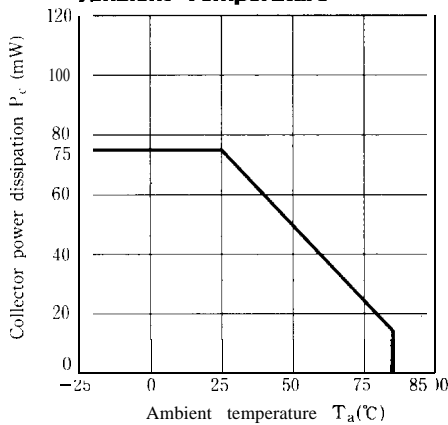
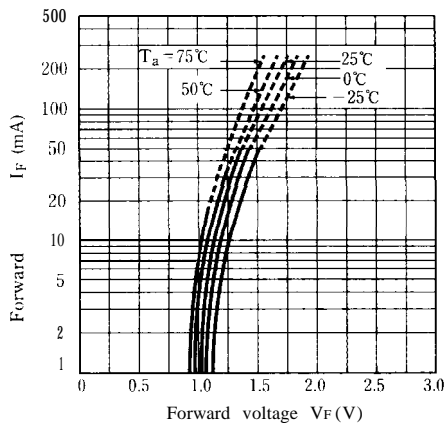
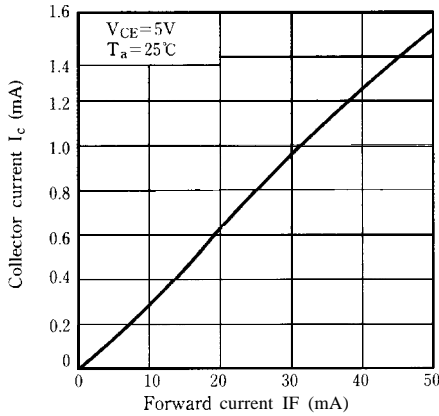


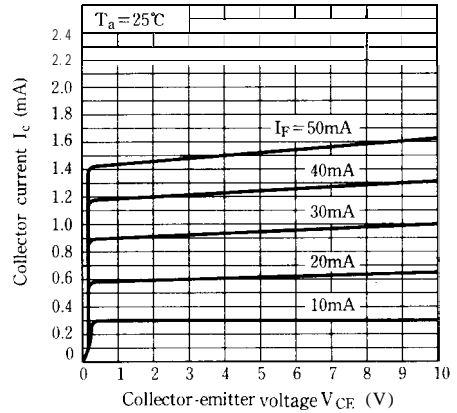
Fig. 4 Forward Current vs. Forward Voltage



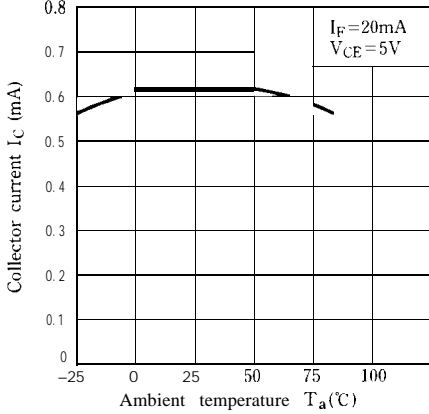
**Fig. 5 Collector Current vs. Forward Current**



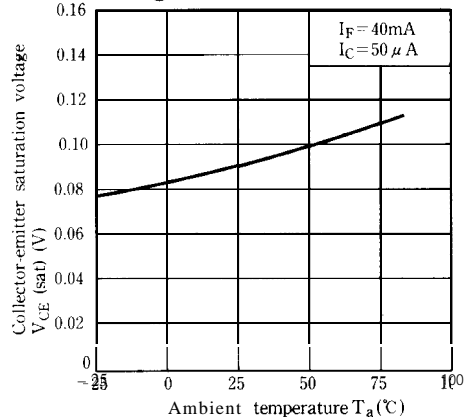
**Fig. 6 Collector Current vs. Collector-emitter Voltage**



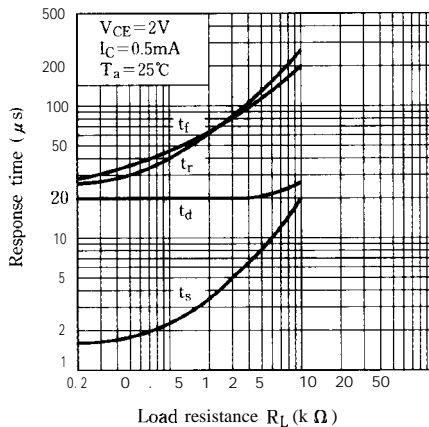
**Fig. 7 Collector Current vs. Ambient Temperature**



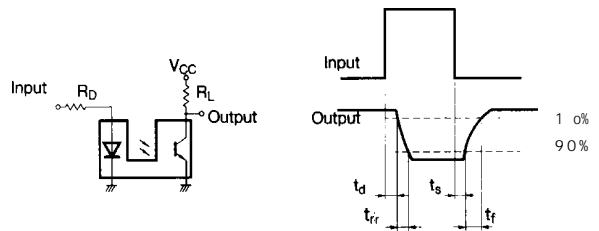
**Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature**



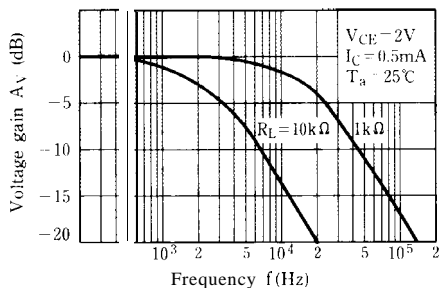
**Fig. 9 Response Time vs. Load Resistance**



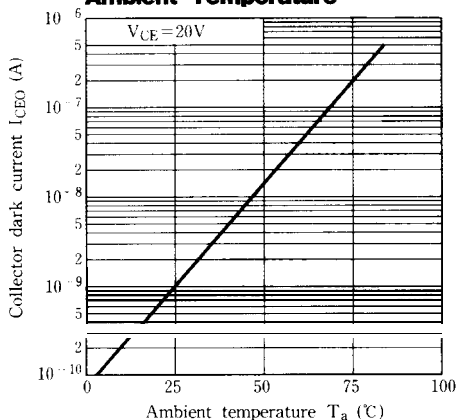
**Test Circuit for Response Time**



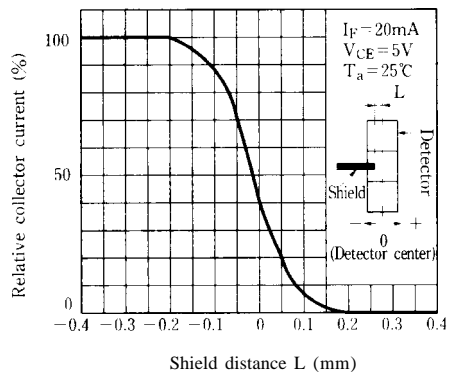
**Fig.10 Frequency Response**



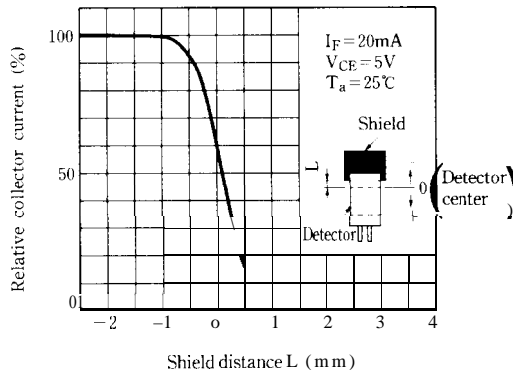
**Fig.11 Collector Dark Current vs. Ambient Temperature**



**Fig.12 Relative Collector Current vs. Shield Distance (1)**



**Fig.13 Relative Collector Current vs. Shield Distance (2)**



● Please refer to the chapter "Precautions for Use" (Page 78 to 93)