

# GP1 S561

## Compact and Thin Photointerrupter

### ■ Featurea

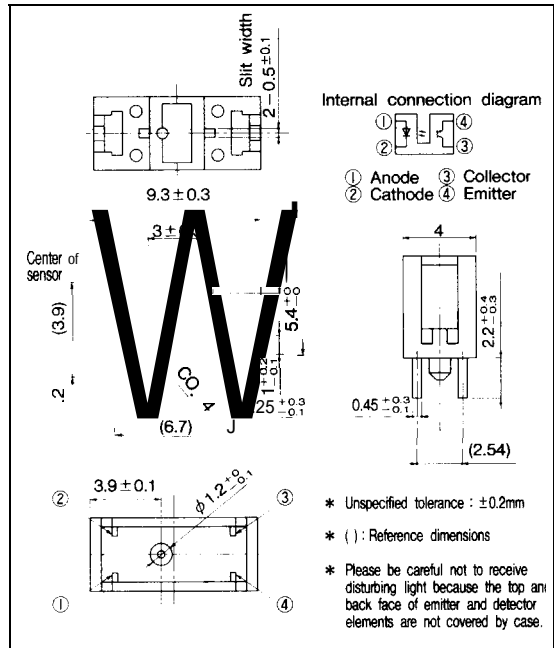
1. Compact and thin package  
(Thickness of case : 4mm)
2. With a positioning pin

### ■ Applications

1. Floppy disk Ratings drivers
2. VCRs

### ■ Outline Dimensions

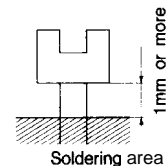
(Unit : mm)



### ■ 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  $\leq 100 \mu\text{s}$ , Duty ratio : 0.01

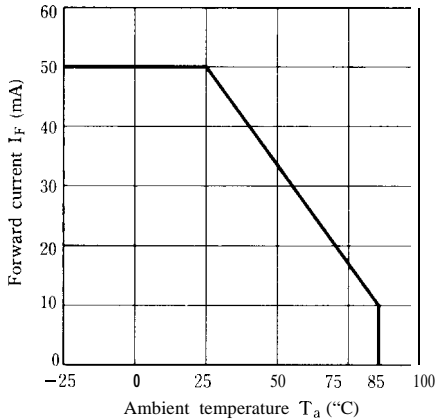
\*2 For 3 seconds

**Electro-optical characteristics**

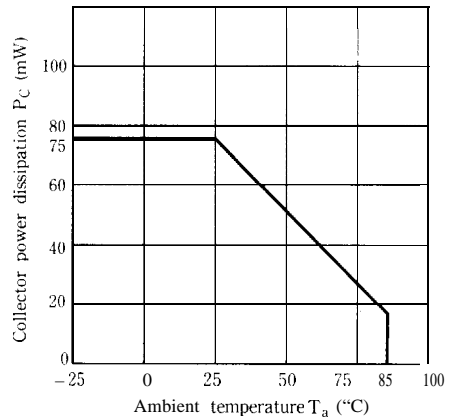
( $T_a = 25^\circ\text{C}$ )

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	$V_F$	$I_F = 20\text{mA}$	—	1.25	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	
Transfer characteristics	Collector current	$I_C$	$V_{CE} = 10\text{V}, I_F = 9\text{mA}$	0.3	—	6	mA	
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 40\text{mA}, I_C = 0.1\text{mA}$	—	—	0.4	v	
	Response time	Rise time	$t_r$	$V_{CE} = 2\text{V}, I_C = 1\text{mA}$	—	3	15	$\mu\text{s}$
		Fall time	$t_f$	$R_i = 100\Omega$	—	4	20	$\mu\text{s}$

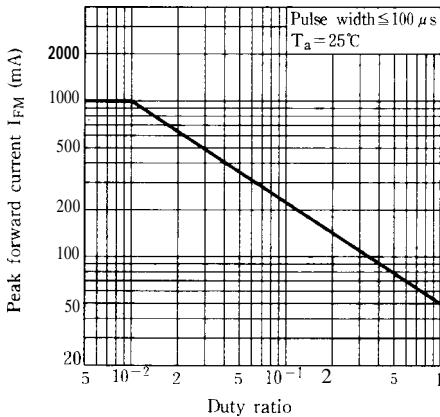
**Fig. 1 Forward Current vs. Ambient Temperature**



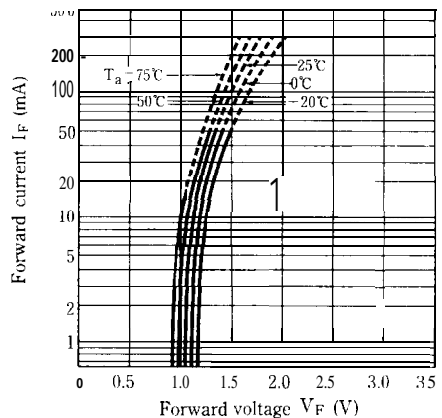
**Fig. 2 Collector Power Dissipation vs. Ambient Temperature**



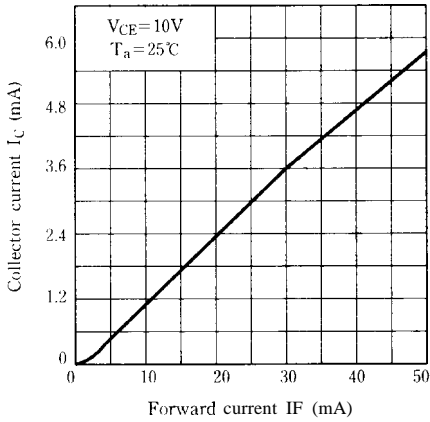
**Fig. 3 Peak Forward Current vs. Duty Ratio**



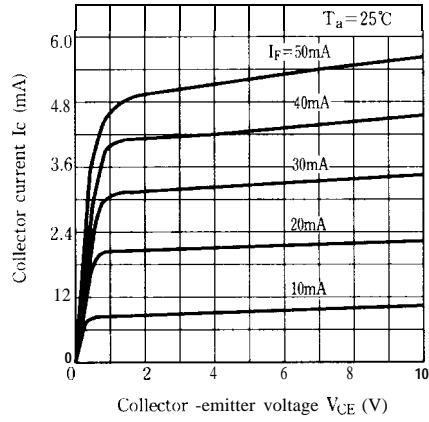
**Fig. 4 Forward Current vs. Forward Voltage**



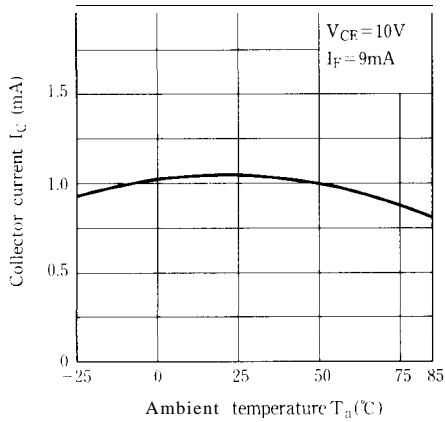
**Fig. 5 Collector Current vs. Forward Current**



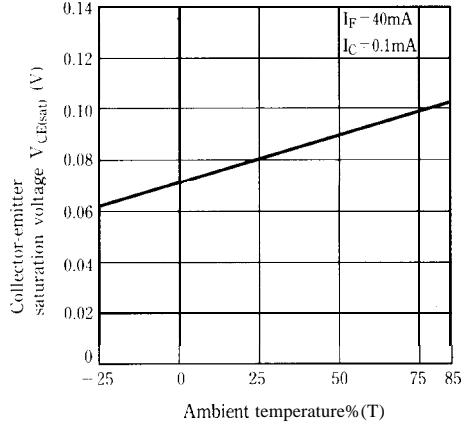
**Fig. 6 Collector Current vs. Collector-emitter Voltage**



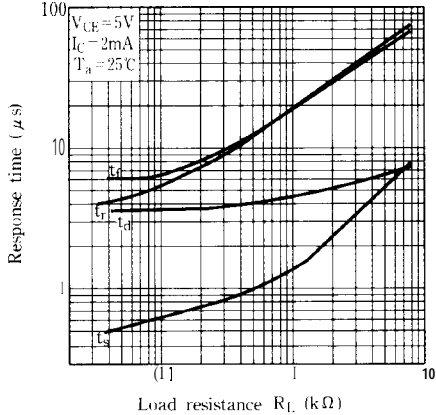
**Fig. 7 Collector Current vs. Ambient Temperature**



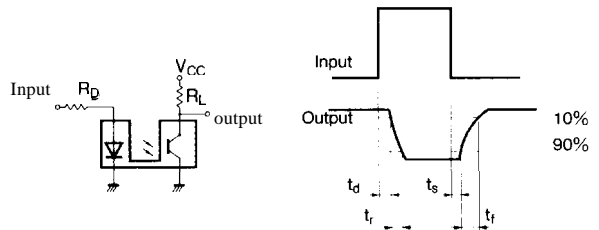
**Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature**



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



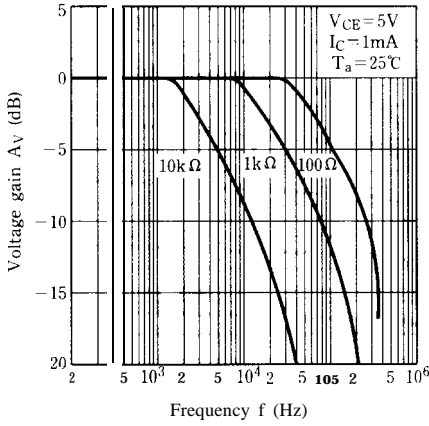
**Test Circuit for Response Time**



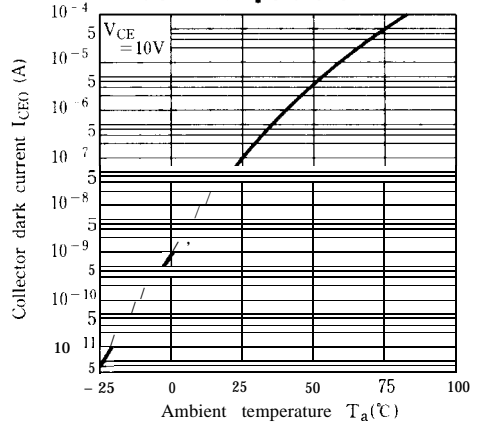
Photointerrupters



**Fig.10 Frequency Response**



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



● Please refer to the chapter “Precautions for Use” (Page 78 to 93).