

# GP1S32

## Subminiature Photointerrupter

### ■ Features

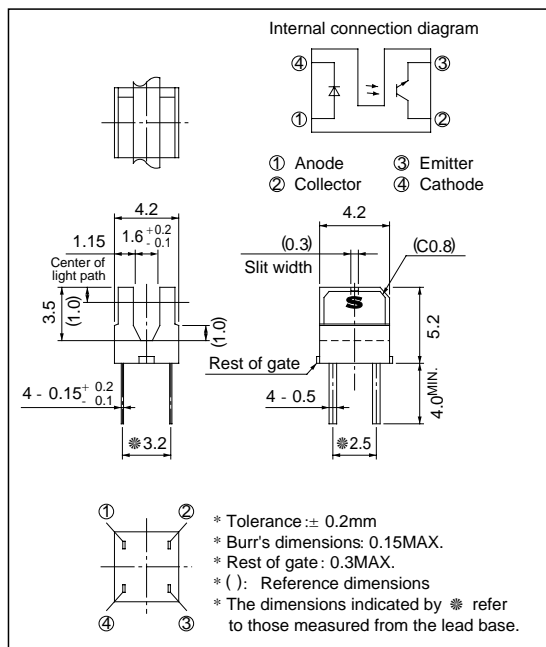
1. Ultra-compact package
2. PWB mounting type
3. High sensing accuracy (Slit width : 0.3mm)
4. High speed response

### ■ Applications

1. Floppy disk drives

### ■ Outline Dimensions

(Unit : mm)

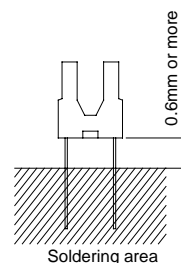


### ■ Absolute Maximum Ratings

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

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 to + 85	$^\circ\text{C}$
Storage temperature		$T_{stg}$	- 40 to + 100	$^\circ\text{C}$
*1 Soldering temperature		$T_{sol}$	260	$^\circ\text{C}$

\*1 For 5 seconds



Electro-optical Characteristics

(Ta= 25°C)

Parameter			Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V <sub>F</sub>	I <sub>F</sub> = 20mA	-	1.2	1.4	V
	Reverse current		I <sub>R</sub>	V <sub>R</sub> = 3V	-	-	10	μA
Output	Collector dark current		I <sub>CEO</sub>	V <sub>CE</sub> = 20V	-	-	100	nA
Transfer chara- cteristics	Collector current		I <sub>C</sub>	V <sub>CE</sub> = 5V, I <sub>F</sub> = 5mA	50	-	300	μA
	Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>F</sub> = 10mA, I <sub>C</sub> = 50 μA	-	-	0.4	V
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 100 μA	-	35	100	μs
		Fall time	t <sub>f</sub>		-	35	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

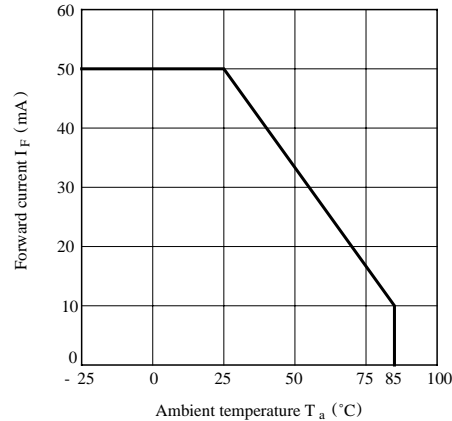


Fig. 2 Power Dissipation vs. Ambient Temperature

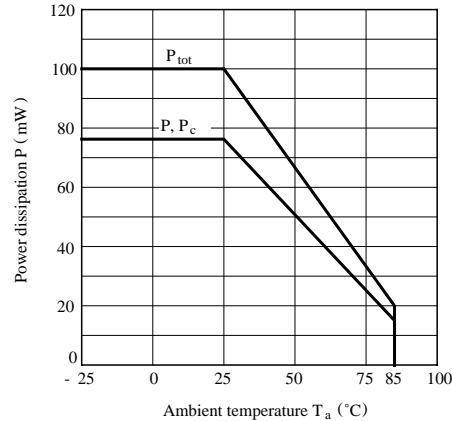


Fig. 3 Forward Current vs. Forward Voltage

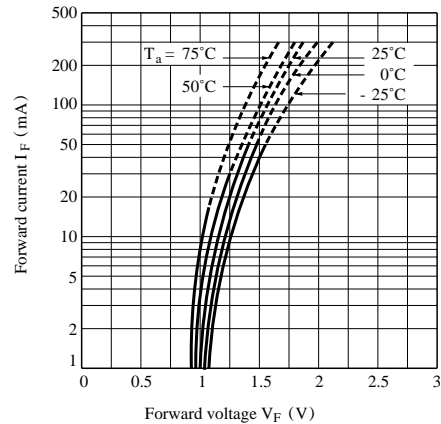
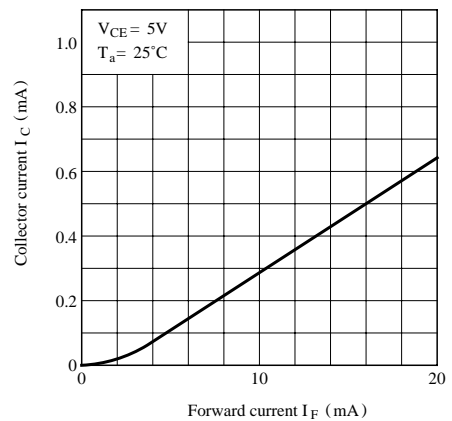
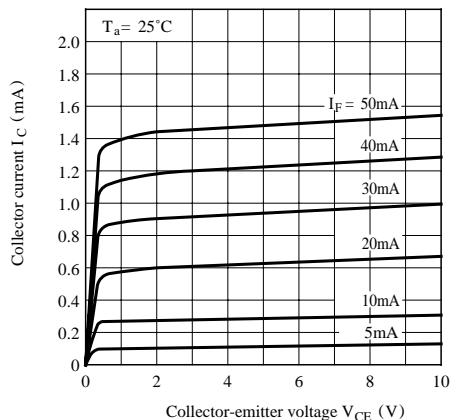


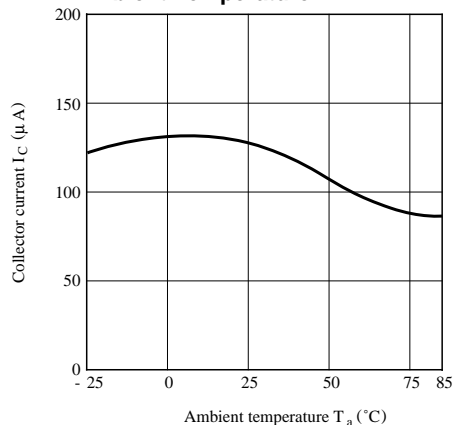
Fig. 4 Collector Current vs. Forward Current



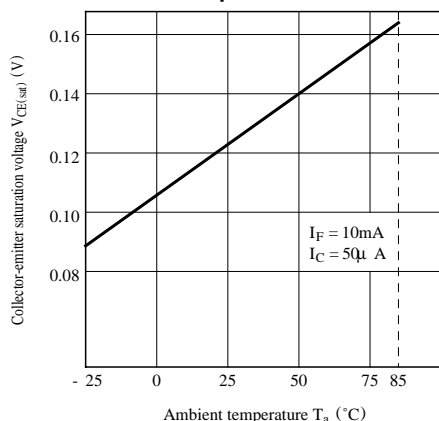
**Fig. 5 Collector Current vs. Collector-emitter Voltage**



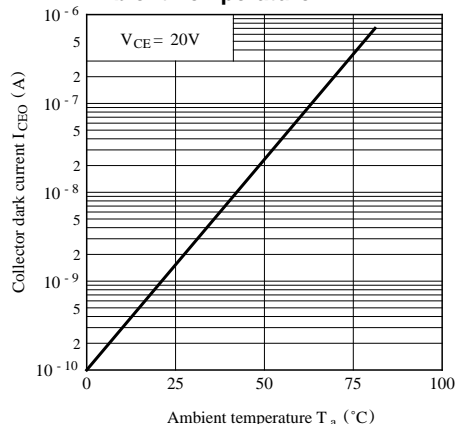
**Fig. 6 Collector Current vs. Ambient Temperature**



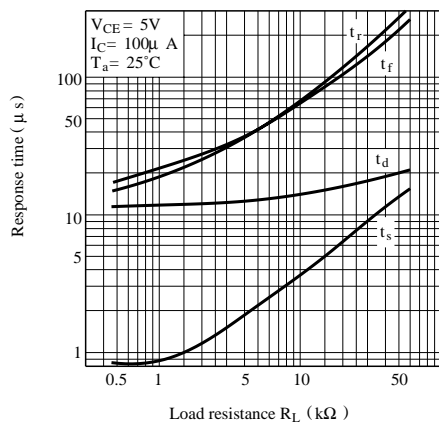
**Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature**



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



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



**Test Circuit for Response Time**

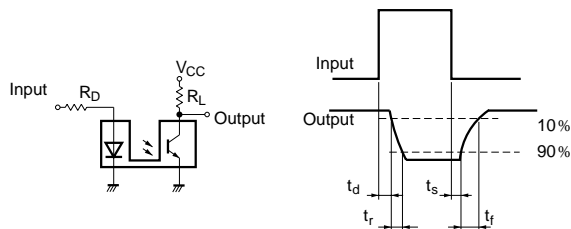


Fig.10 Relative Collector Current vs. Shield Distance (1)

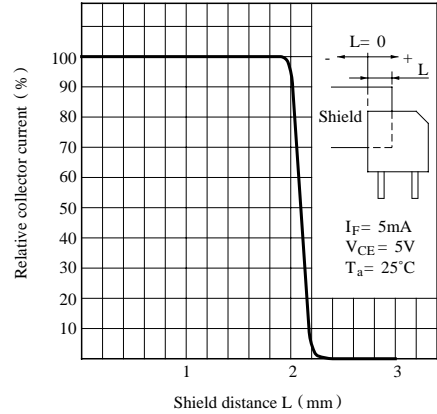
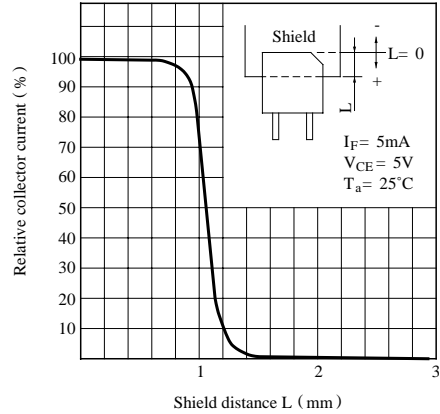


Fig.11 Relative Collector Current vs. Shield Distance (2)



● Please refer to the chapter “Precautions for Use”.