GP1S23

Subminiature Photointerrupter

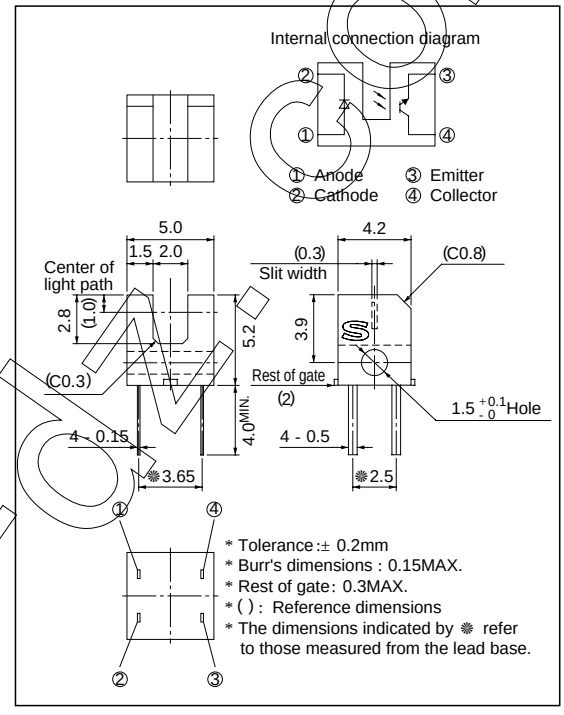
■ Features

1. Ultra-compact
2. PWB mounting type package
3. High sensing accuracy (Slit width: 0.3mm)
4. Gap between light emitter and derector: 2mm

■ Applications

1. Cameras
2. Floppy disk drives

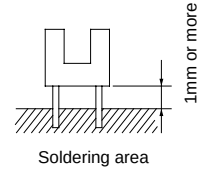
■ Outline Dimensions (Unit: mm)



■ 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 to + 85	°C
	Storage temperature	T_{stg}	- 40 to + 100	°C
	*1Soldering temperature	T_{sol}	260	°C

*1 For 3 seconds



■ Electro-optical Characteristics

(Ta = 25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA	-	1.2	1.4	V
	Reverse current		I_R	V_R = 3V	-	-	10	μA
Output	Collector dark current		I_{CEO}	V_{CE} = 20V	-	-	1×10^{-7}	A
Transfer-characteristics	Collector Current		Ic	I_F = 5mA, V_{CE} = 5V	40	-	400	μA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 10mA, I_C = 40μA	-	-	0.4	V
	Response time	Rise time	t_r	I_C = 0.1mA, V_{CE} = 5V, R_L = 1kΩ	-	50	150	μs
		Fall time	t_f		-	50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

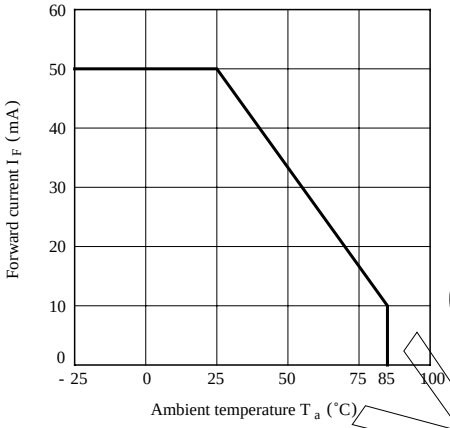


Fig. 2 Power Dissipation vs. Ambient Temperature

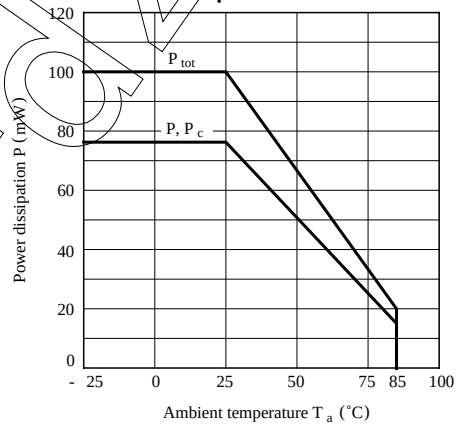


Fig. 3 Forward Current vs. Forward Voltage

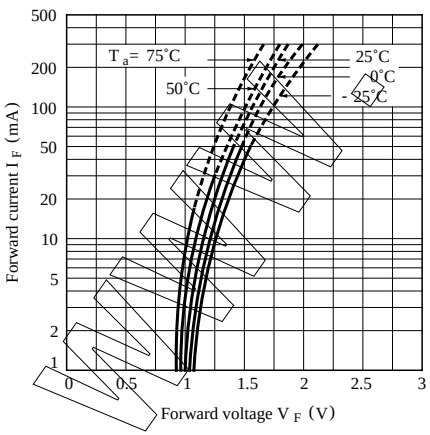


Fig. 4 Collector Current vs. Forward Current

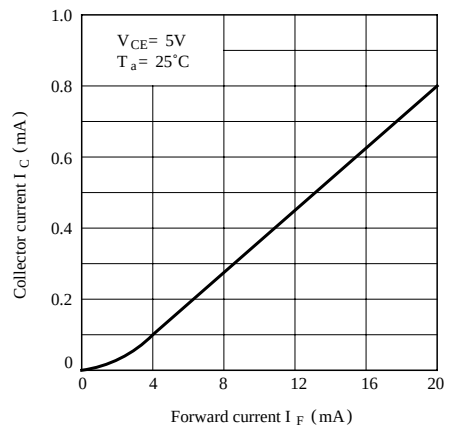


Fig. 5 Collector Current vs. Collector-emitter voltage

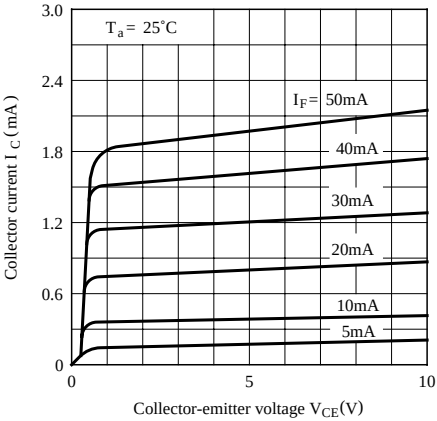


Fig. 6 Collector Current vs. Ambient Temperature

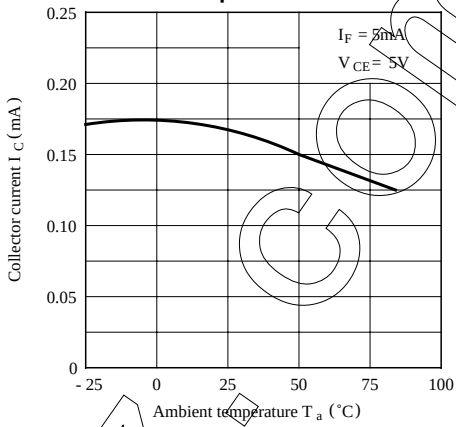


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

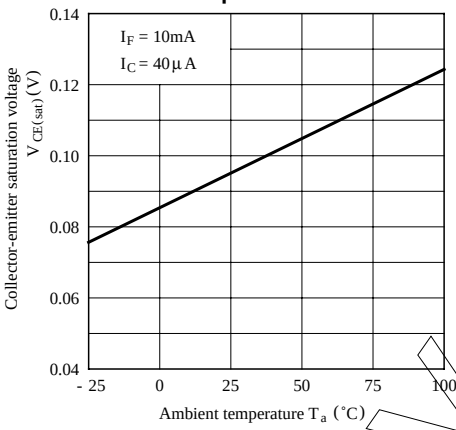


Fig. 8 Collector Dark Current vs. Ambient Temperature

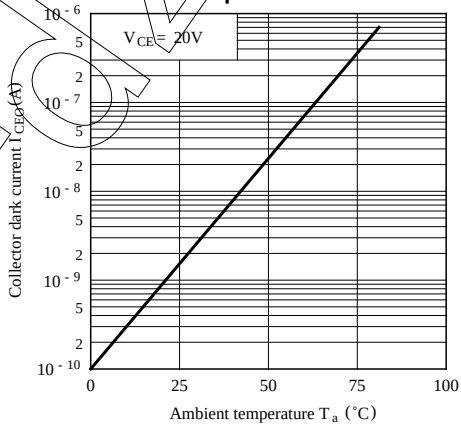
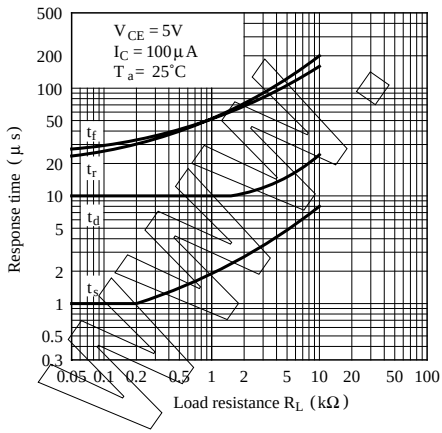


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

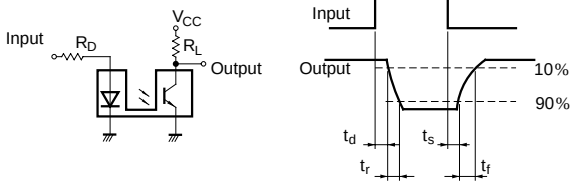


Fig.10 Relative Collector Current vs. Shield Distance (1)

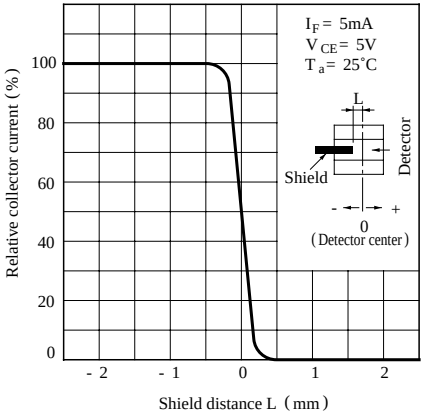
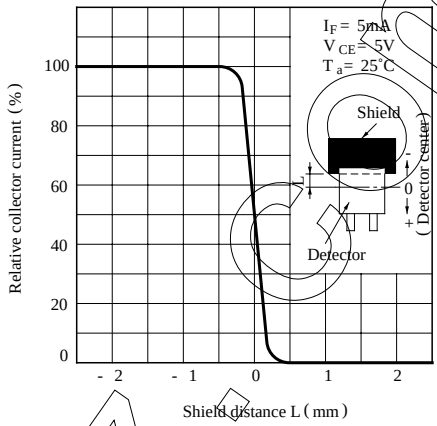


Fig.11 Relative Collector Current vs. Shield Distance (2)



- Please refer to the chapter "Precautions for Use".

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- Consumer electronics

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