GP1S29

Subminiature **Photointerrupter**

■ Features

1. Ultra-compact type
2. Thin detection portion
   (Thickness of detection portion : 3.2mm)

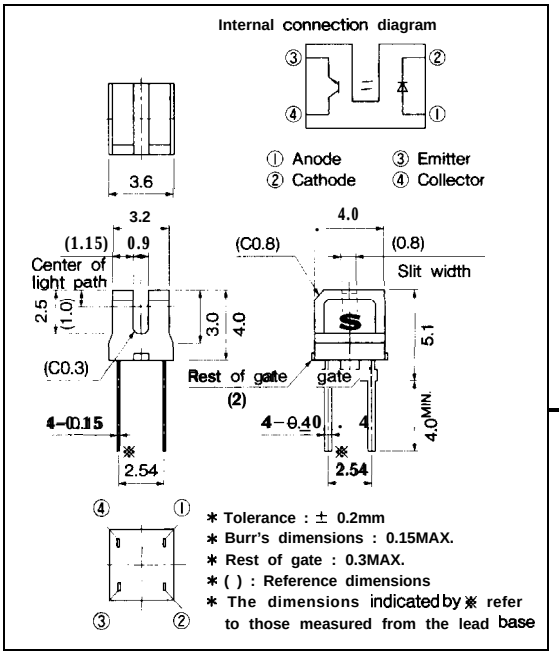
■ Applications

1. Cameras
2. Floppy disk drives

Note) Please use carefully not to receive external disturbing light because the back face of detector element is not covered with case.

■ Outline Dimensions

(Unit : mm)

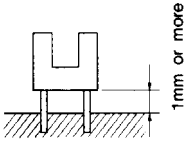


■ Absolute Maximum Ratings

(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	℃
Storage temperature		T_{stg}	−40 to +100	℃
*1Soldering temperature		T_{sol}	260	℃

*1 For 5 seconds



■ Electro-optical Characteristics

(Ta=25℃)

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	Current transfer ratio		CTR	I_F=1.5mA, V_{CE}= 5V	2.6	−	16	%
	Collector-emitter saturation voltage		V_{CE}(sat)	I_F=3mA, I_C=30μA	−	−	0.4	v
	Response time	Rise time	t_r	V_{CE}=5V, R_L=1kΩ	−	50	150	μs
		Fall time	t_f	I_C=100μA	−	50	150	u s

Fig. 1 Forward Current vs. Ambient Temperature

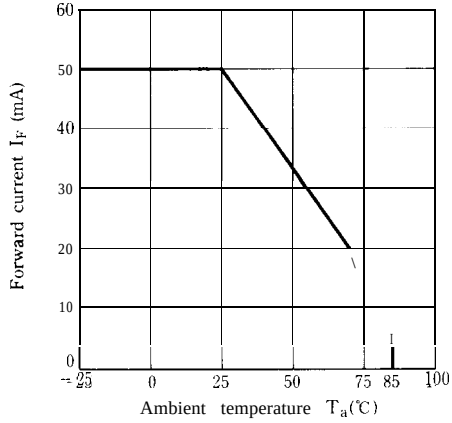


Fig. 2 Power Dissipation vs. Ambient Temperature

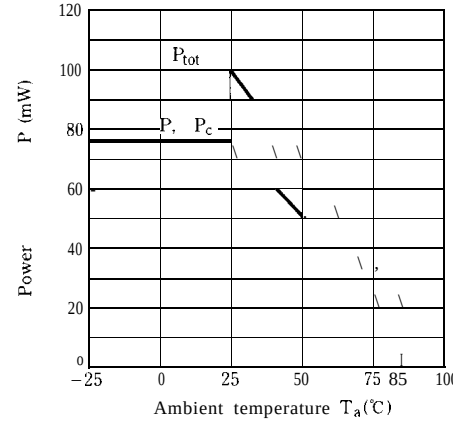


Fig. 3 Forward Current vs. Forward Voltage

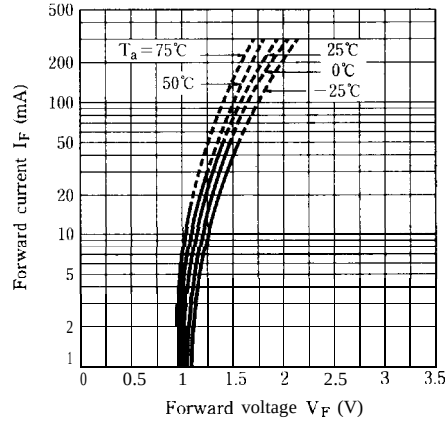


Fig. 4 Collector Currant vs. Forward Current

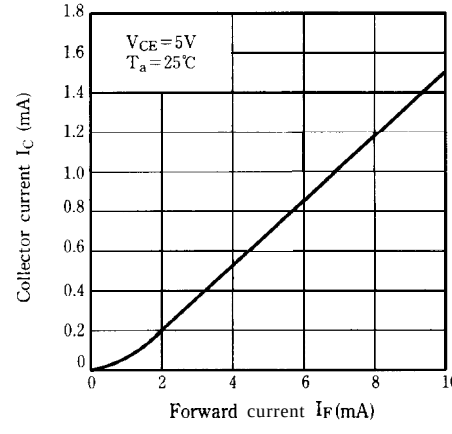


Fig. 5 **Collector Current** vs. **Collector-emitter** voltage

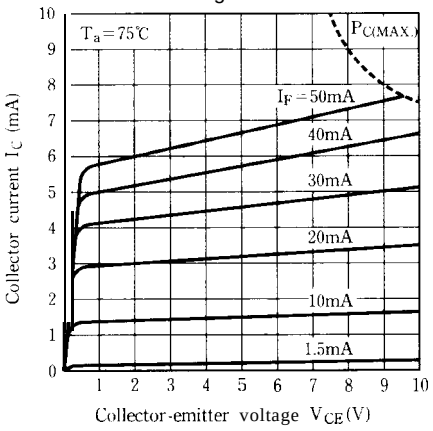


Fig. 6 **Collector Current vs. Ambient Temperature**

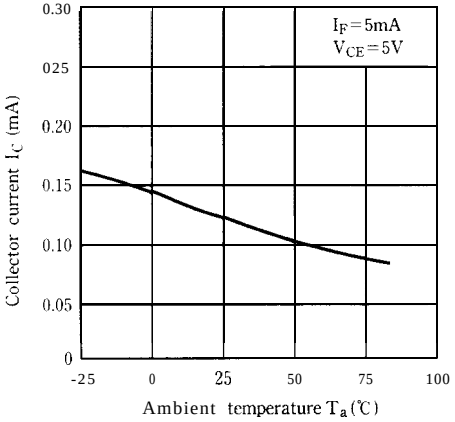


Fig. 7 **Collector-emitter Saturation Voltage vs. Ambient Temperature**

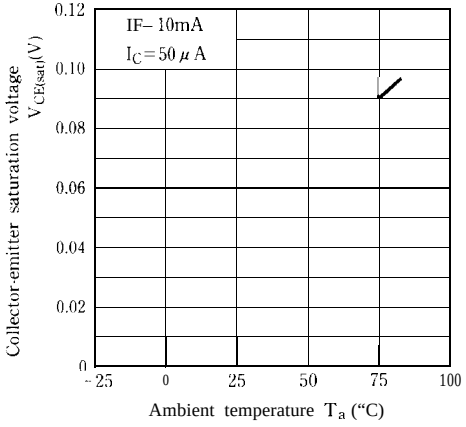


Fig. 8 Collector Dark Current vs. Ambient Temperature

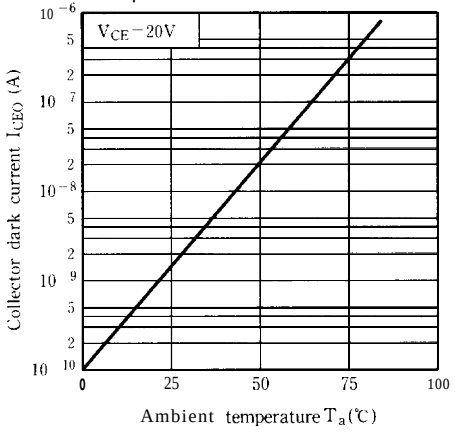
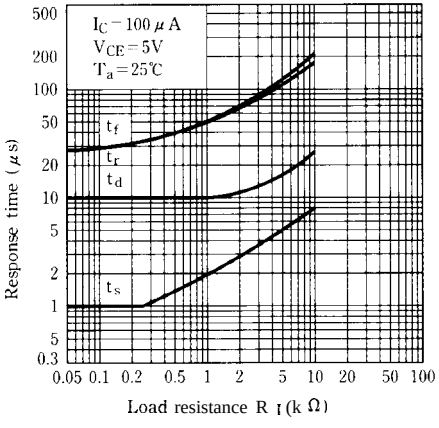


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

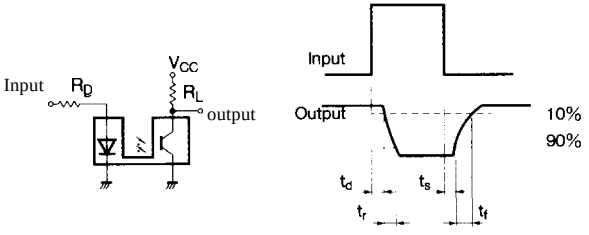


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Fig.10 Relative Collector Current vs. Shield Distance (1)

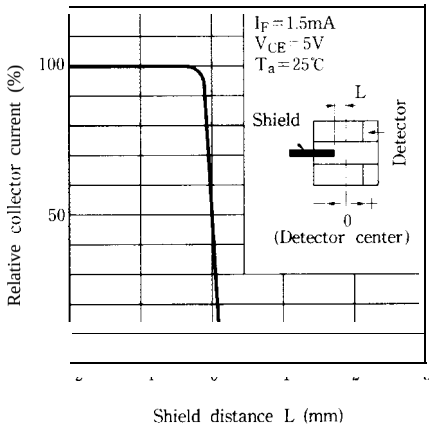
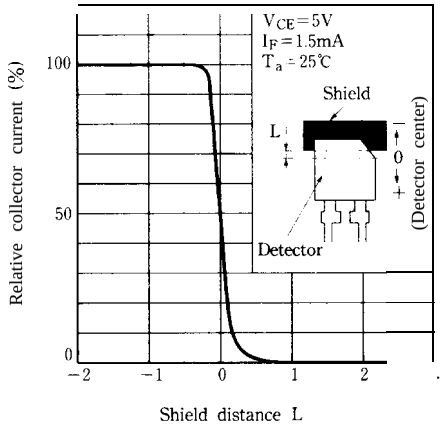


Fig.11 Relative Collector Current vs. Shield Distance (2)



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