GP1S07 Subminiature Photointerrupter

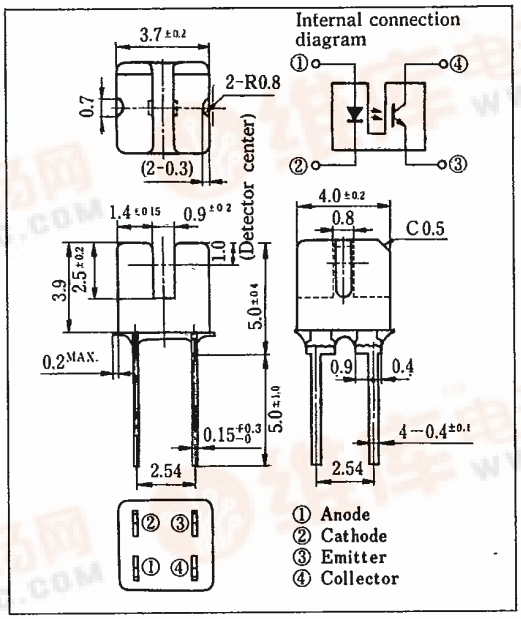
■ Features

1. Ultra-colmpact (Capacity: 0.06cc) and light
2. PWB mounting type package
3. High sensing accuracy (Slit width: 0.8mm)

■ Applications

1. Still camera
2. Miniprinter
3. Microfloppy disk
4. Compact equipment

■ Outline Dimensions (Unit: mm)



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■ 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 dissipatioo	P_C	75	mW
Total power dissipation		P_{tot}	100	mW
Operating temperature		T_{opr}	−25～+85	°C
Storage temperature		T_{stg}	−40～+100	°C
*1Soldering temperature		T_{sol}	260	°C

*1 For 3 seconds

T-41-73

■ 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	—	—	10^{-7}	A
Transfer characteristics	Current transfer ratio	CTR	I_F=1.5mA, V_{CE}=5V	4.3	7.3	13.3	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	I_F=3mA, I_C=30μA	—	0.08	0.4	V
	Response time (Rise)	t_r	I_C=0.1mA, V_{CE}=5V, R_L=	—	50	150	μs
	Response time (Fall)	t_f	1kΩ	—	50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

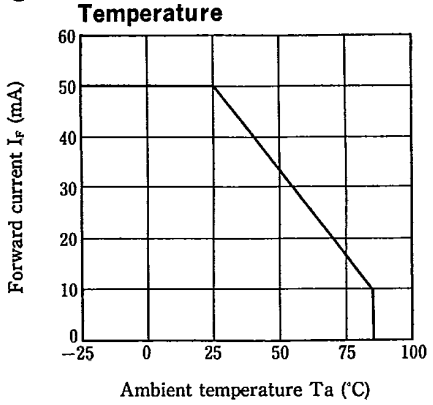


Fig. 2 Power Dissipation vs. Ambient Temperature

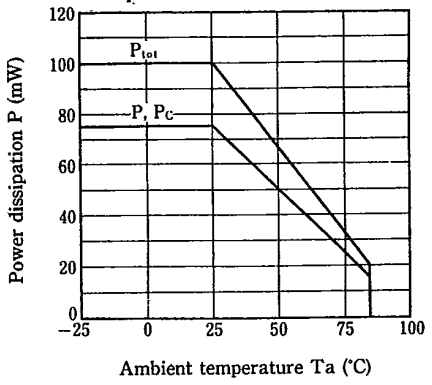


Fig. 3 Forward Current vs. Forward Voltage

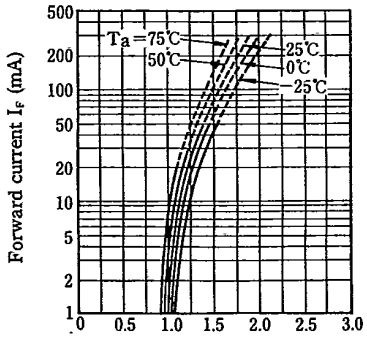


Fig. 4 Collector Current vs. Forward Current

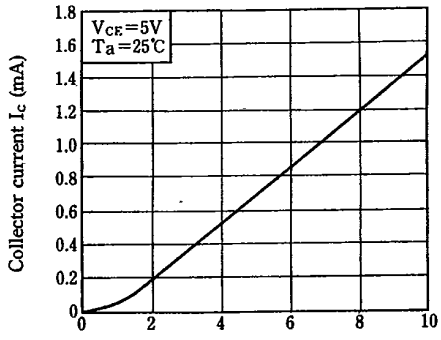


Fig. 5 Collector Current vs. Collector-emitter Voltage

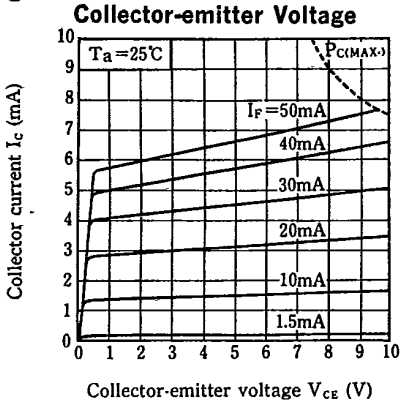


Fig. 6 Collector Current vs. Ambient Temperature

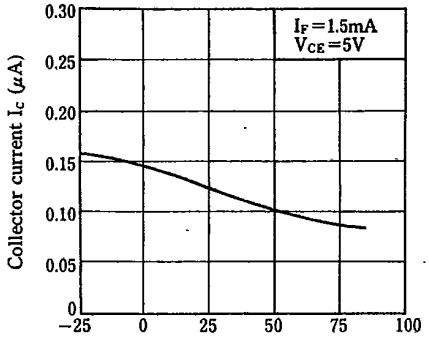


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

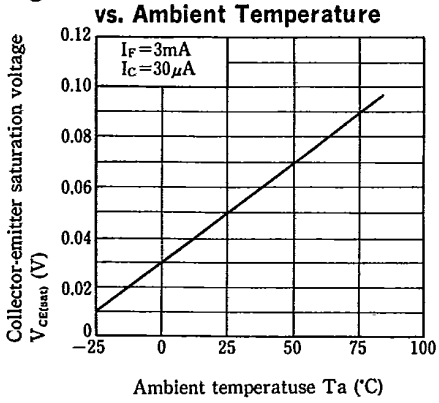


Fig. 8 Collector Dark Current vs. Ambient Temperature

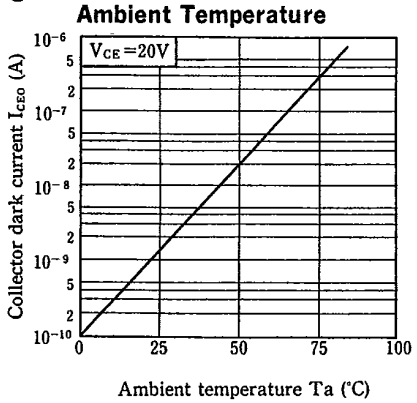
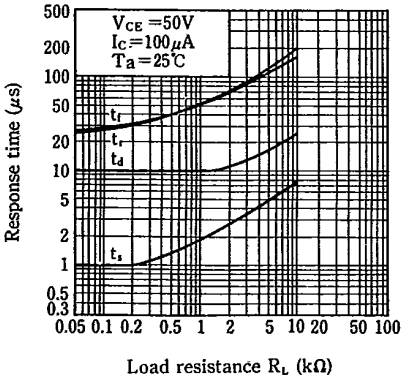


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

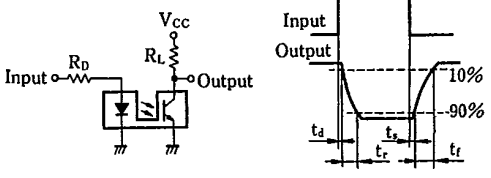


Fig. 10 Relative Collector Current vs. Shield Distance (1)

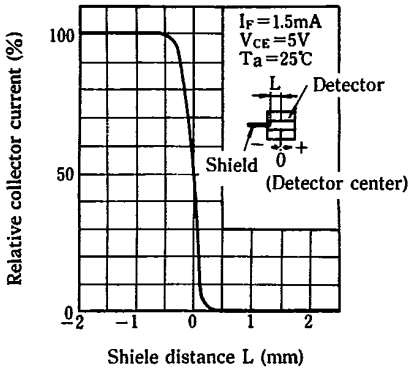


Fig. 11 Relative Collector Current vs. Shield Distance (2)