GP1S30

Subminiature Photointerrupter

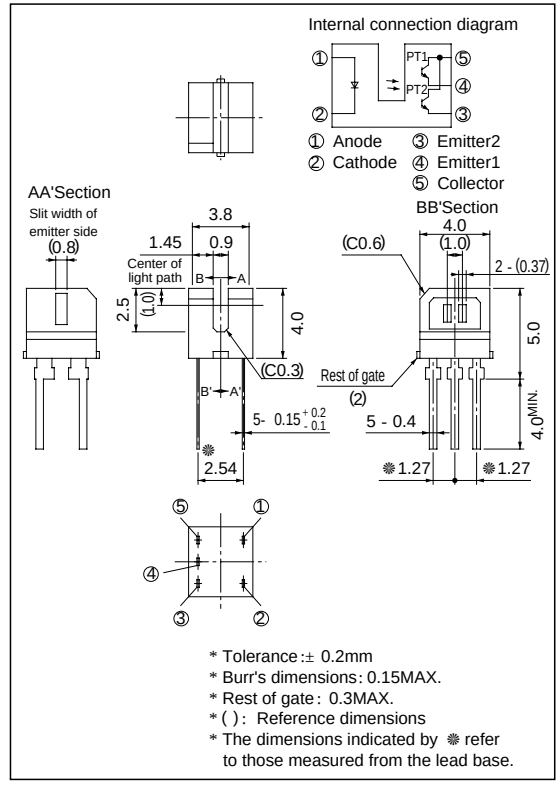
■ Features

1. Compact package
2. PWB mouning type
3. Double-phase phototransistor output type for detecting of rotation direction and count
4. Detecting pitch: 0.6mm

■ Applications

1. Mouses
2. Cameras

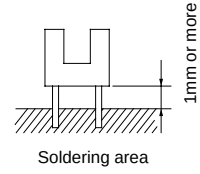
■ Outline Dimensions (Unit: mm)



■ Absolute Maximum Ratings (Ta = 25°C)

Prameter		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_{CE_1O}	35	V
		V_{CE_2O}		
	Emitter-collector Voltage	V_{E_1CO}	6	V
		V_{E_2CO}		
	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 MAX. 5 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	-	-	100	nA
Transfer characteristics	Collector current		I_C	V_{CE} = 5V, I_F = 4mA	250	-	1 000	μA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 8mA, I_C = 125μA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CC} = 5V, I_C = 100μA	-	50	150	μs
		Fall time	t_f	R_L = 1 000Ω	-	50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

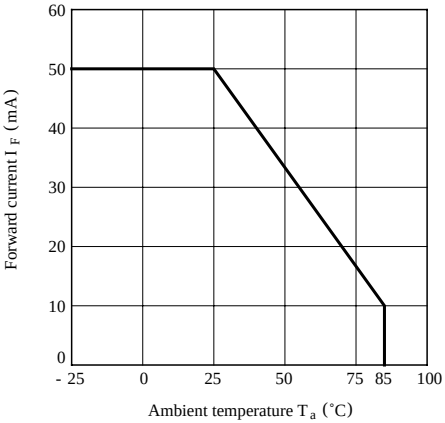


Fig. 2 Power Dissipation vs. Ambient Temperature

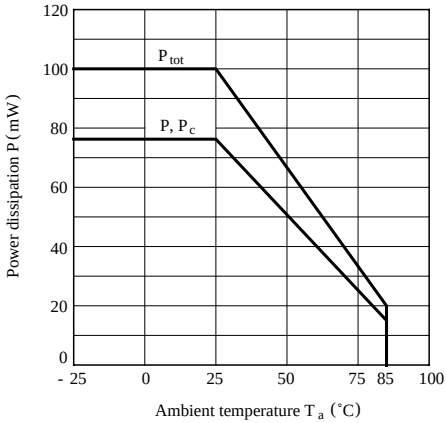


Fig. 3 Forward Current vs. Forward Voltage

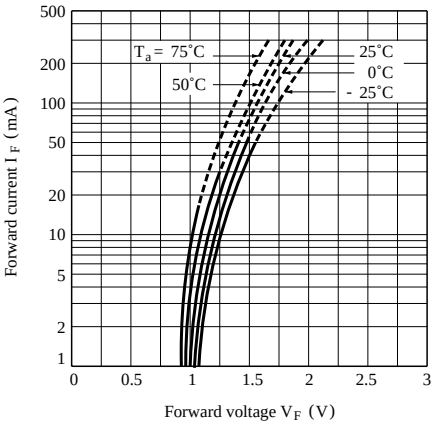


Fig. 4 Collector Current vs. Forward Current

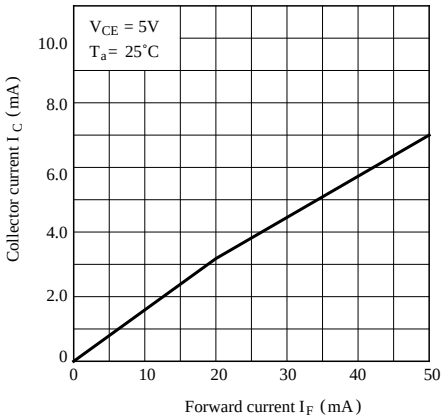


Fig. 5 Collector Current vs. Collector-emitter Voltage

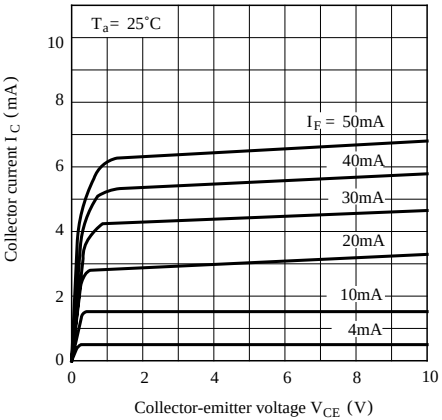


Fig. 6 Collector Current vs. Ambient Temperature

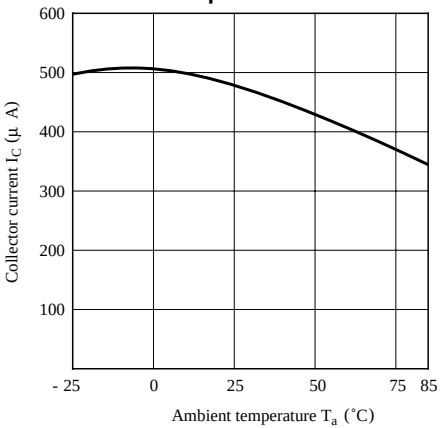


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

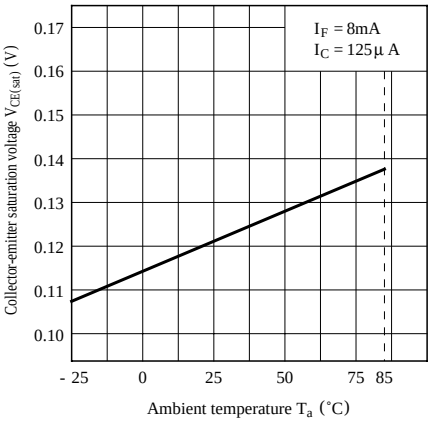


Fig. 8 Collector Dark Current vs. Ambient Temperature

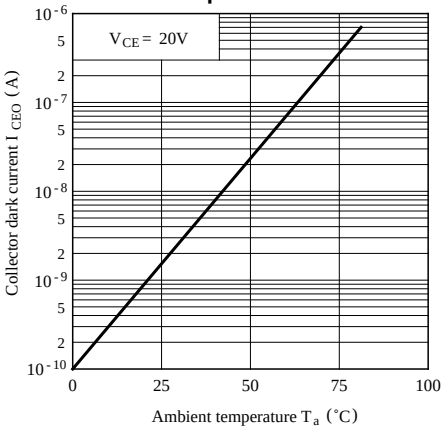
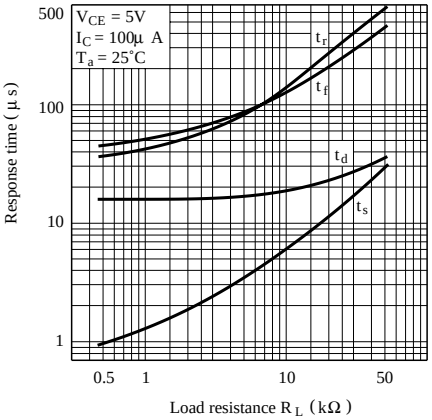


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

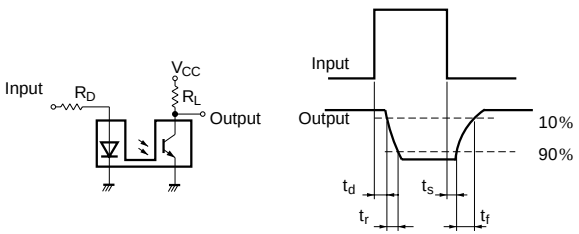


Fig.10 Relative Collector Current vs. Shield Distance (1)

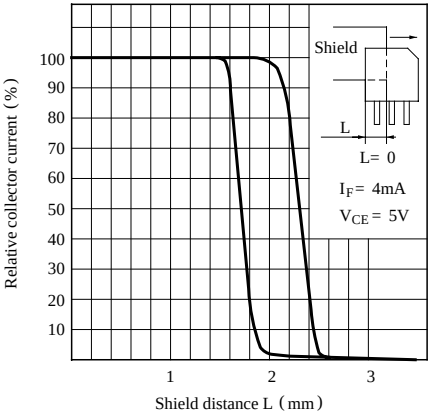
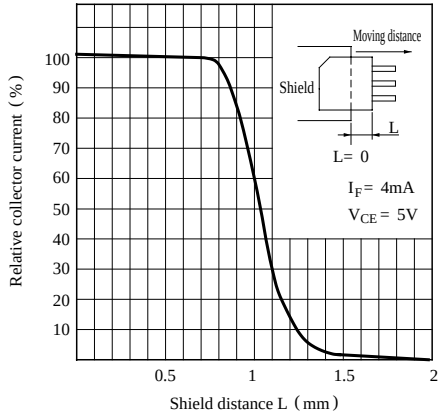


Fig.11 Relative Collector Current vs. Shield Distance (2)



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

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