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GP1S25

Side Lead Type Ultra-compact Photointerrupter

■ Features

1. Side lead ultra-compact transmission type
2. Conforming to solder reflow

Pre-heat : 160 °C, MAX. 120 sec

Reflow : (200 °C, MAX. 60 sec)
(240 °C, MAX. 10 sec)

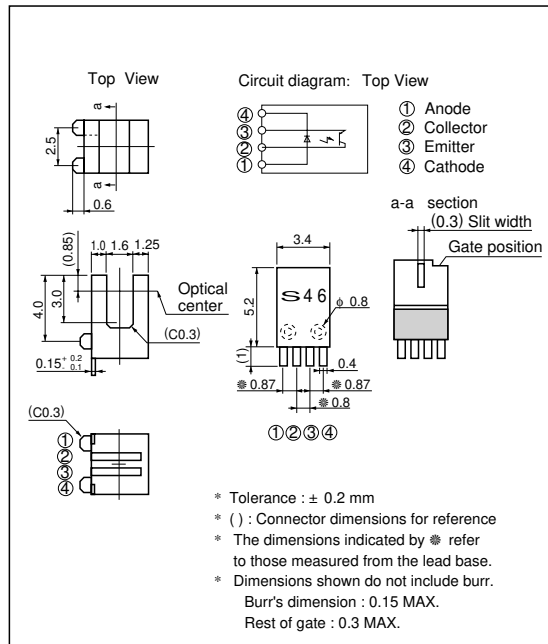
3. Slit : 0.3 mm
4. Gap : 1.6 mm

■ Applications

1. CD-ROM drives
2. FDDs

■ 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
*1 Soldering temperature		T _{sol}	260	°C

*1 Soldering time : For 3 seconds (hand soldering)

Electro-optical Characteristics

(Ta=25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Reverse current	I_R	$V_R = 3\text{V}$	-	-	10	μA
Output	Dark current	I_{CEO}	$V_{CE} = 20\text{V}$	-	-	100	nA
Transfer characteristics	Collector current	I_C	$V_{CE} = 5\text{V}, I_F = 5\text{mA}$	50	-	300	μA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 10\text{mA}, I_C = 50\mu\text{A}$	-	-	0.4	V
	Response time	Rise time	t_r	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}$	-	35	100
Fall time		t_f	$R_L = 1\,000\Omega$	-	35	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

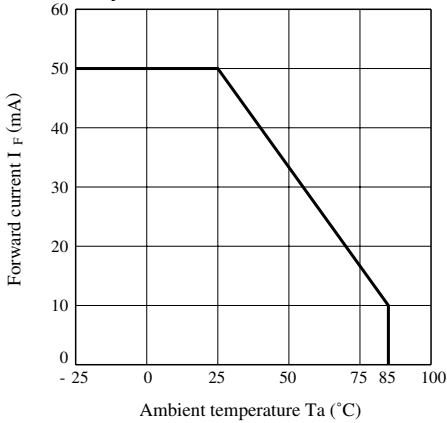


Fig. 2 Power dissipation vs. Ambient Temperature

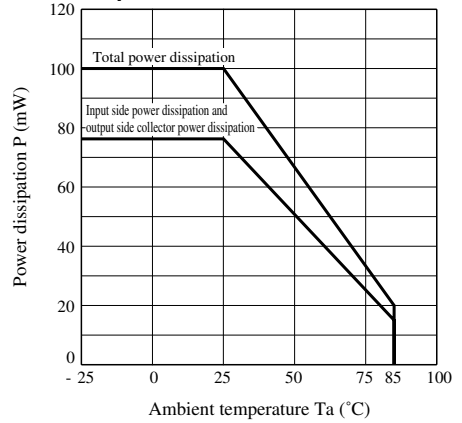


Fig. 3 Forward Current vs. Forward Voltage

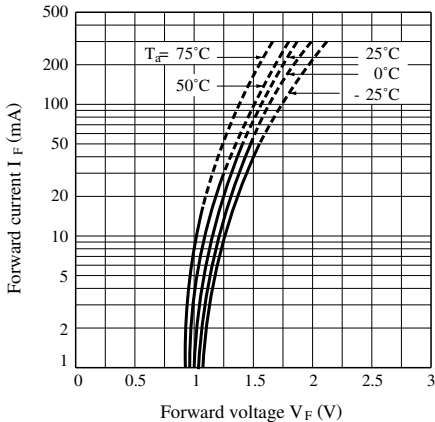


Fig. 4 Collector Current vs. Forward Current

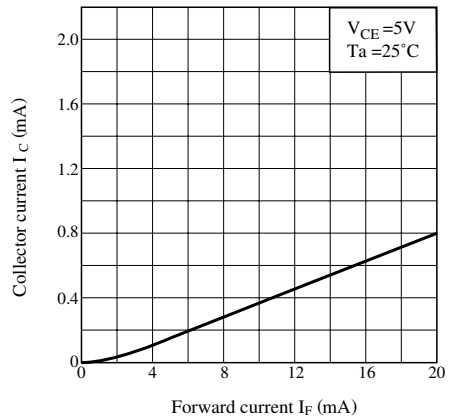


Fig. 5 Collector Current vs. Collector-emitter Voltage

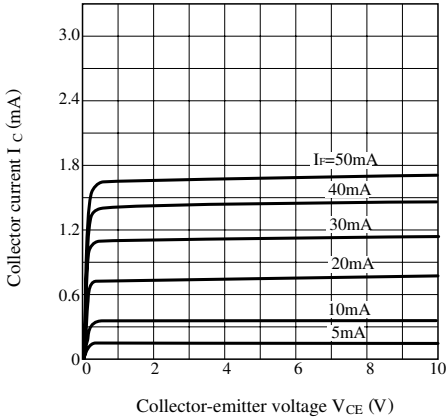


Fig. 6 Relative Collector Current vs. Ambient Temperature

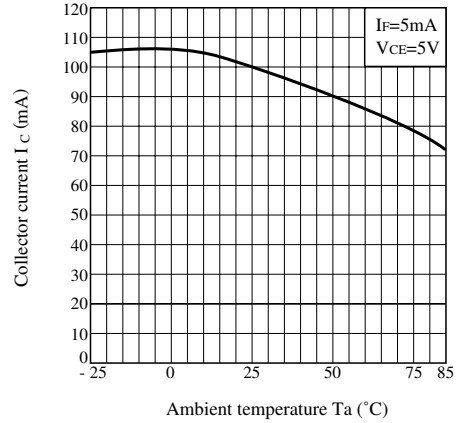


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

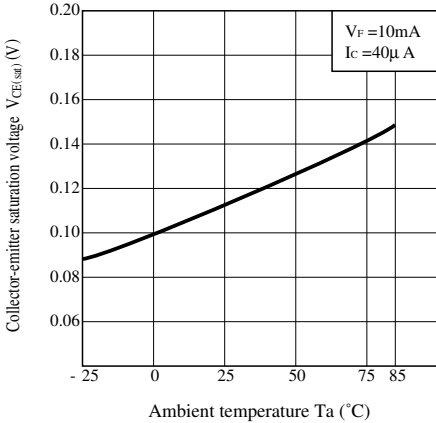


Fig. 8 Dark Current vs. Ambient Temperature

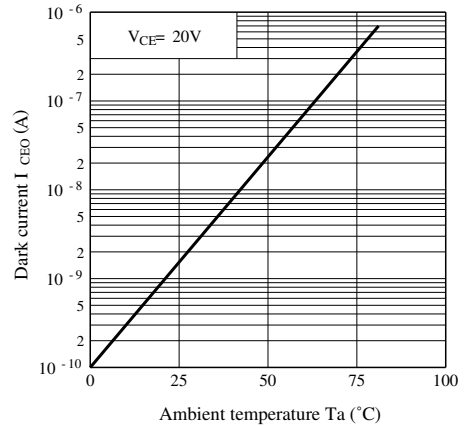
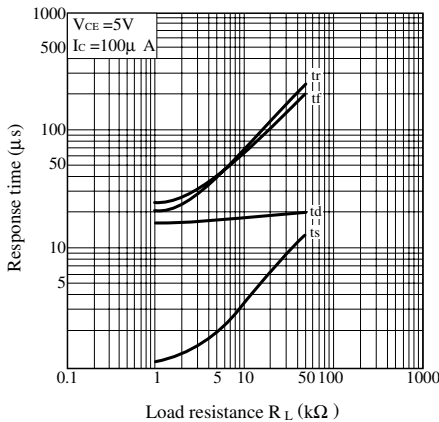


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

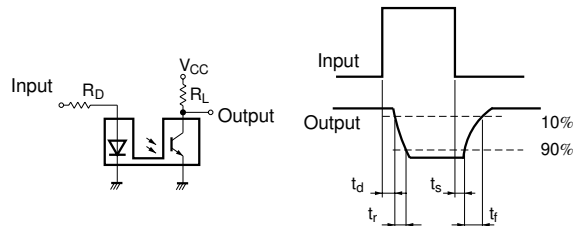


Fig. 10 Detecting Position Characteristics (1)

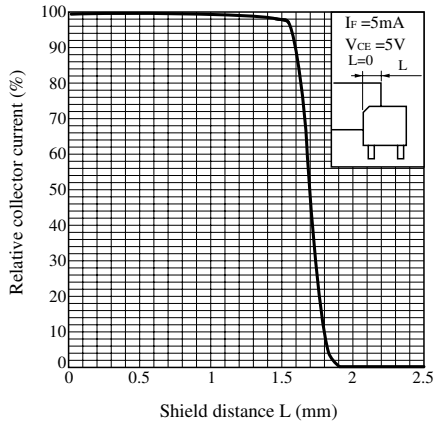
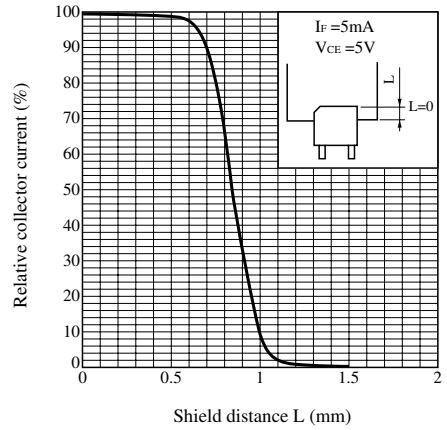


Fig. 11 Detecting Position Characteristics (2)



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

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