GP1S25

Side Lead Type Ultra-compact Photointerrupter

■ Features

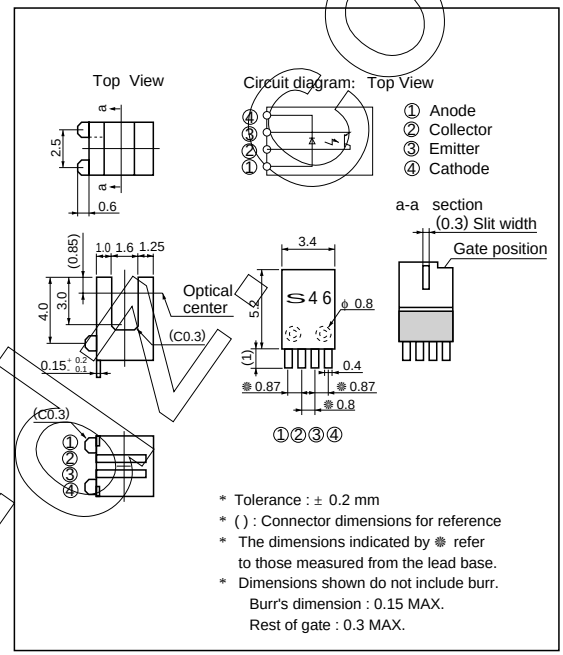
1. Side lead ultra-compact transmission type
2. Conforming to solder reflow
   Pre-heat : 160 ˚C, MAX. 120 sec
   Reflow : (200 ˚C, MAX. 60 sec / 240 ˚C, MAX. 10 sec)
3. Slit : 0.3 mm
4. Gap : 1.6 mm

■ 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 = 20mA	-	1.2	1.4	V
	Reverse current		I_R	V_R = 3V	-	-	10	μA
Output	Dark current		I_{CEO}	V_{CE} = 20V	-	-	100	nA
Transfer characteristics	Collector current		I_C	V_{CE} = 5V, I_F = 5mA	50	-	300	μA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 10mA, I_C = 50μA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CE} = 5V, I_C = 100μA	-	35	100	μs
		Fall time	t_f	R_L = 1 000Ω	-	35	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

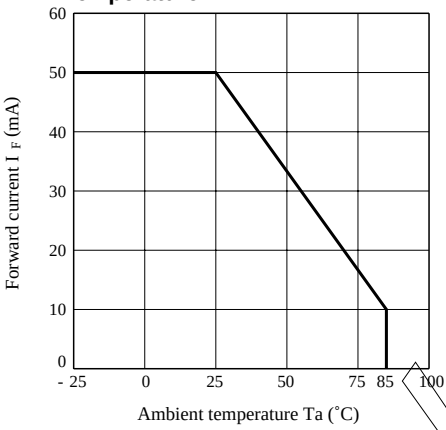


Fig. 2 Power dissipation vs. Ambient Temperature

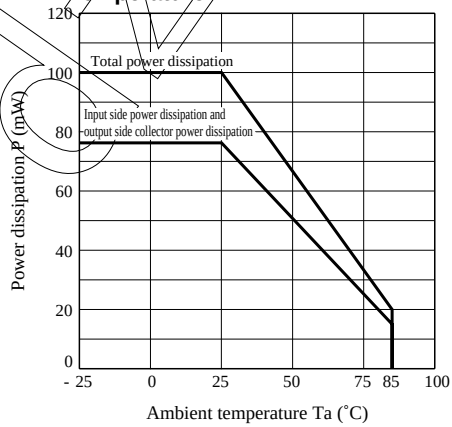


Fig. 3 Forward Current vs. Forward Voltage

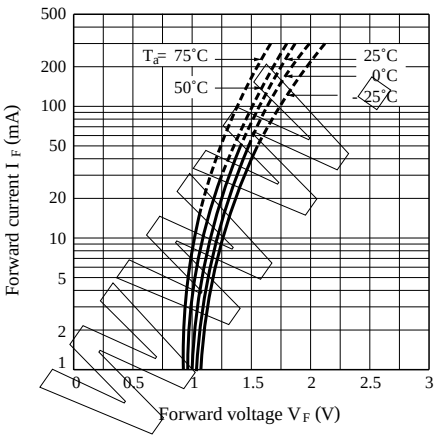


Fig. 4 Collector Current vs. Forward Current

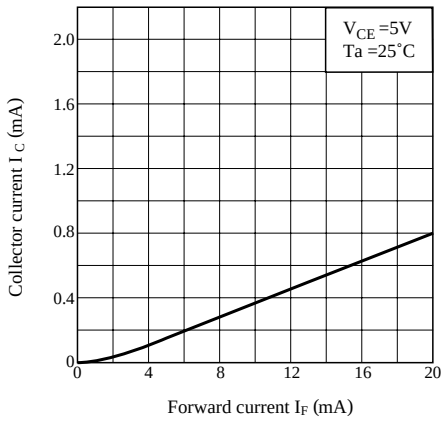


Fig. 5 Collector Current vs. Collector-emitter Voltage

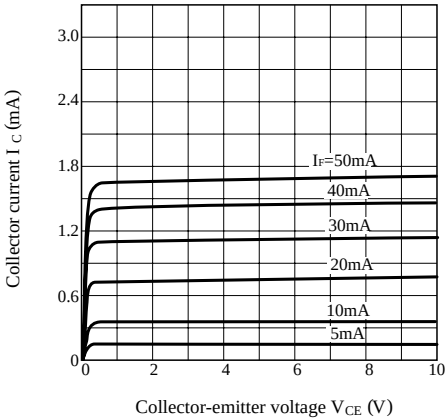


Fig. 6 Relative Collector Current vs. Ambient Temperature

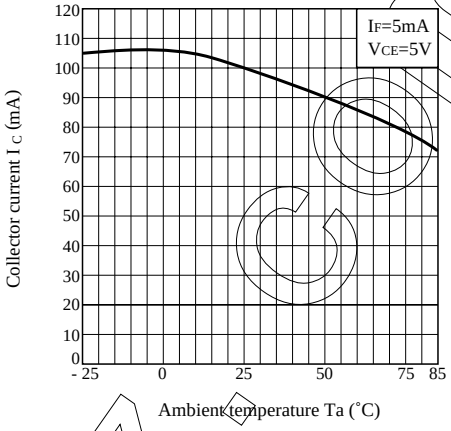


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

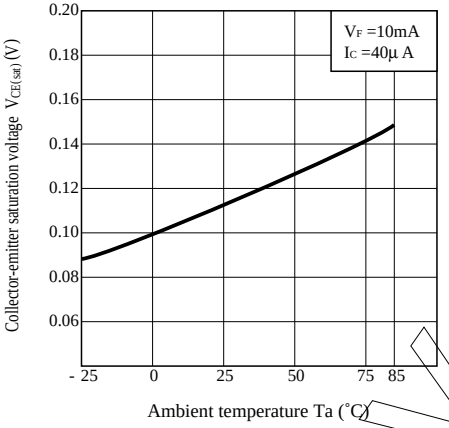


Fig. 8 Dark Current vs. Ambient Temperature

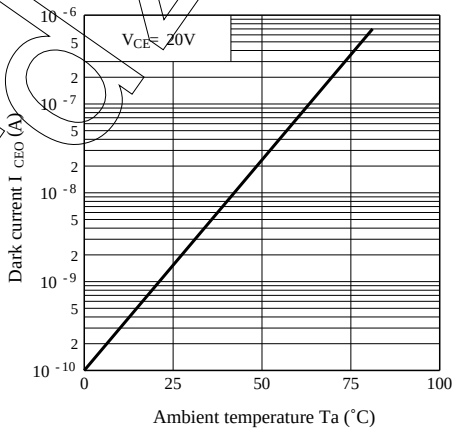
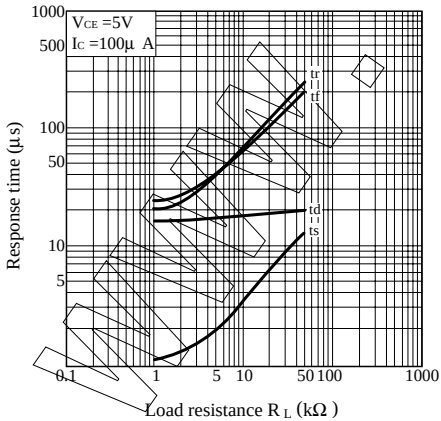


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

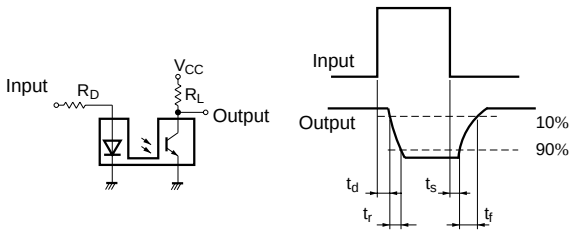


Fig. 10 Detecting Position Characteristics (1)

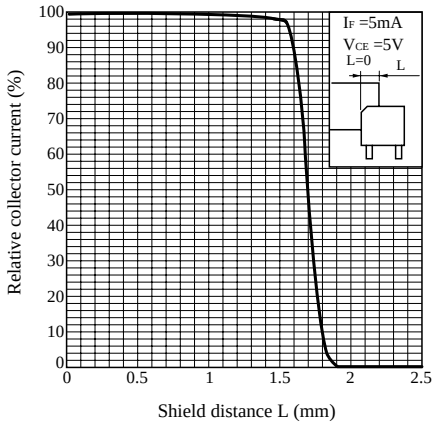
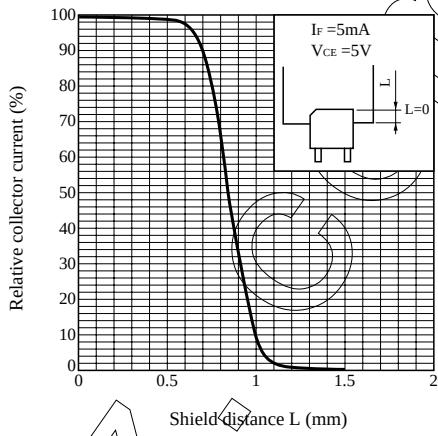


Fig. 11 Detecting Position Characteristics (2)



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

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