

GP1S24

Subminiature Photointerrupter

■ Features

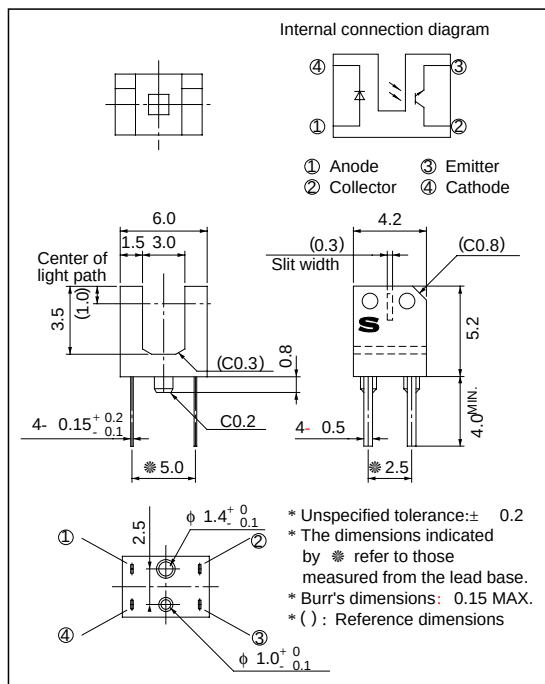
1. Compact package
2. PWB mounting type
3. High sensing accuracy (Silt width : 0.3mm)
4. Gap between light emitter and detector (3mm)
5. With a positioning boss

■ Applications

1. Floppy disk drives
2. Laser disc players

■ Outline Dimensions

(Unit : mm)

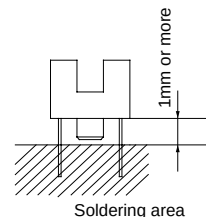


■ Absolute Maximum Ratings

(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 For 5 seconds



■ 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	Collector dark current		I_{CEO}	$V_{CE} = 20\text{V}$	-	-	100	nA
Transfer characteristics	Collector current		I_C	$V_{CE} = 5\text{V}, I_F = 5\text{mA}$	40	-	400	μA
	Collector-emitter saturation voltage		$V_{CE(\text{sat})}$	$I_F = 10\text{mA}, I_C = 40\text{mA}$	-	-	0.4	V
	Response time	Rise time	t_r	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$ $R_L = 1\,000\,\Omega$	-	50	150	μs
		Fall time	t_f		-	50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

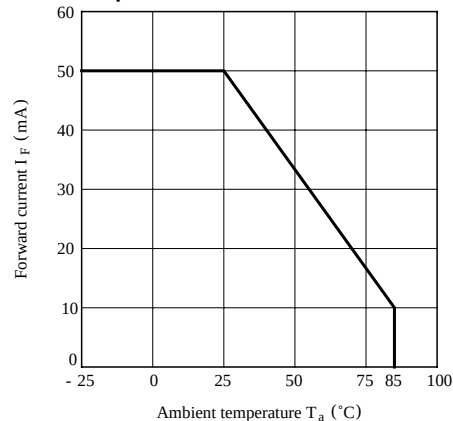


Fig. 2 Power Dissipation vs. Ambient Temperature

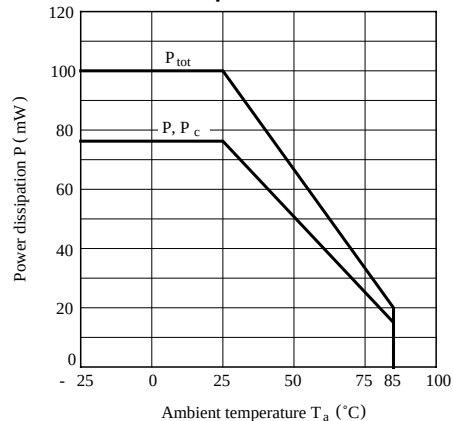


Fig. 3 Forward Current vs. Forward Voltage

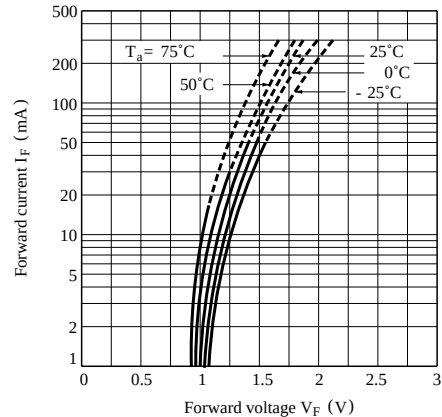


Fig. 4 Collector Current vs. Forward Current

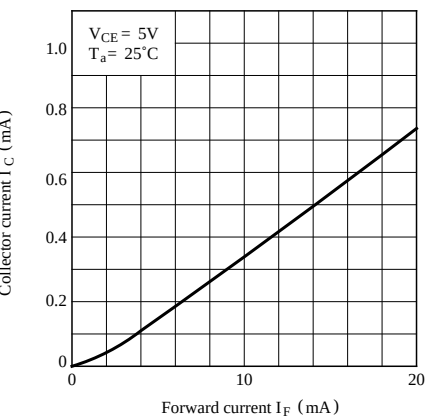


Fig. 5 Collector Current vs. Collector-emitter Voltage

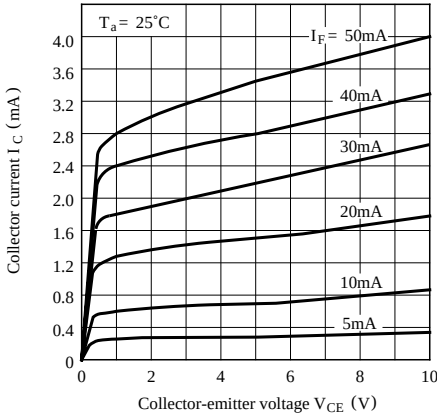


Fig. 6 Collector Current vs. Ambient Temperature

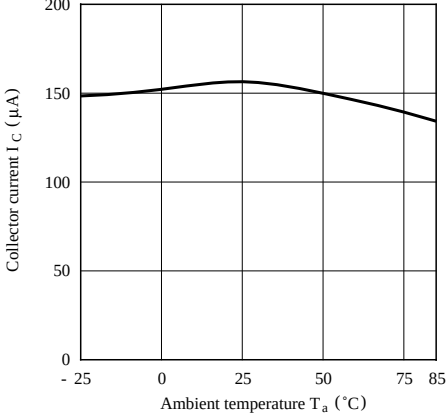


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

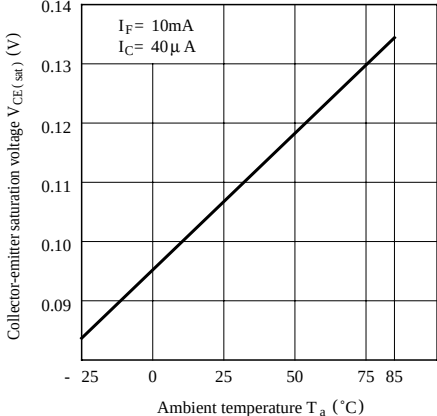


Fig. 8 Collector Dark Current vs. Ambient Temperature

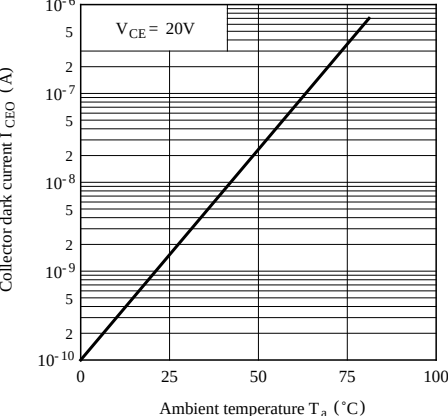
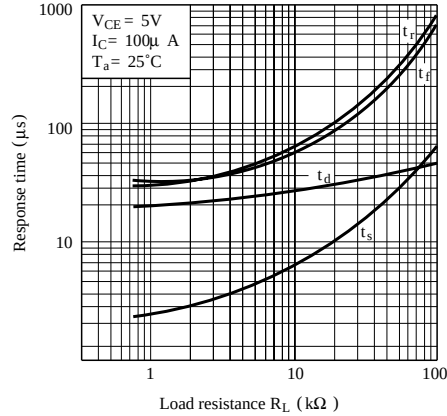


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

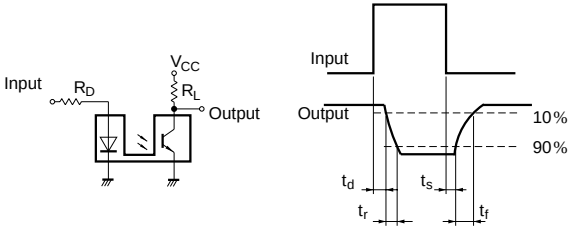


Fig.10 Relative Collector Current vs. Shield Distance (1)

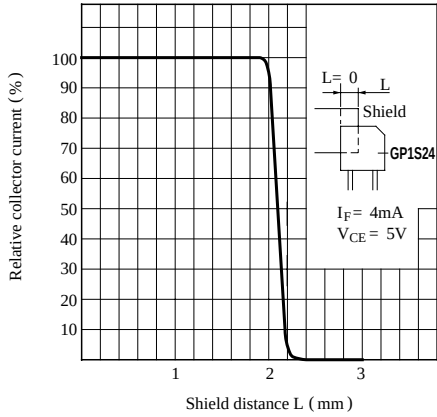
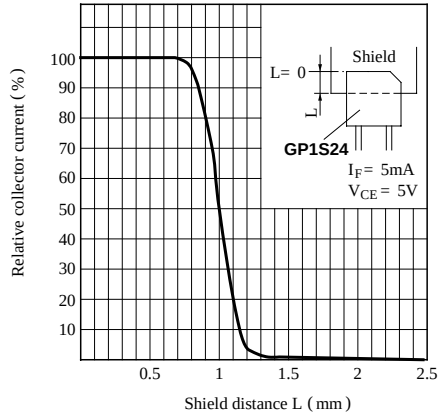


Fig.11 Relative Collector Current vs. Shield Distance (2)



● Please refer to the chapter “Precautions for Use”.

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