

GP1S27

Subminiature Photointerrupter

Features

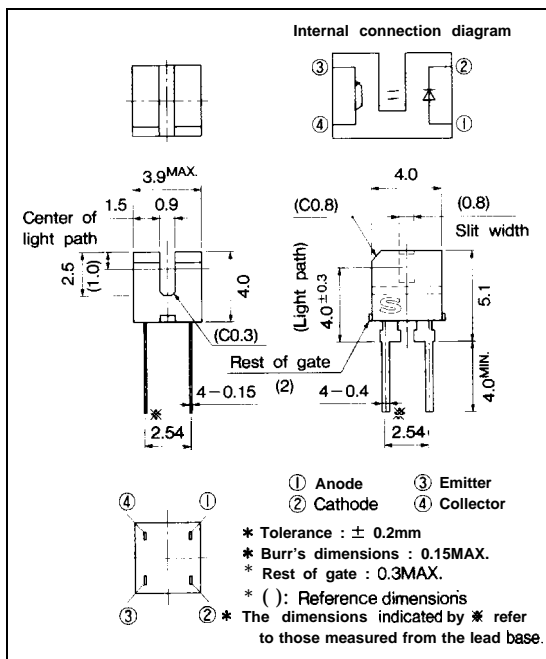
1. Ultra-compact
2. PWB mounting type package
3. Current transfer ratio
(CTR : MIN. 4.3%)

Applications

1. Cameras
2. Floppy disk drives

Outline Dimensions

(Unit : mm)

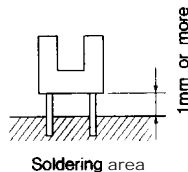


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Absolute Maximum Ratings

(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 oower 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

($T_a = 25^\circ\text{C}$)

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}	$V_{CE} = 20\text{V}$	—	—	1×10^{-7}	A	
Transfer characteristics	Current transfer ratio	CTR	$I_F = 1.5\text{mA}$, $V_{CE} = 5\text{V}$	4.3	—	13.3	%	
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 3\text{mA}$, $I_C = 30\mu\text{A}$		—	0.4	v	
	Response time	Rise time	t_r	$V_{CE} = 5\text{V}$, $R_L = 1\text{k}\Omega$	—	50	150	μs
		Fall time	t_f	$I_C = 100\mu\text{A}$		50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

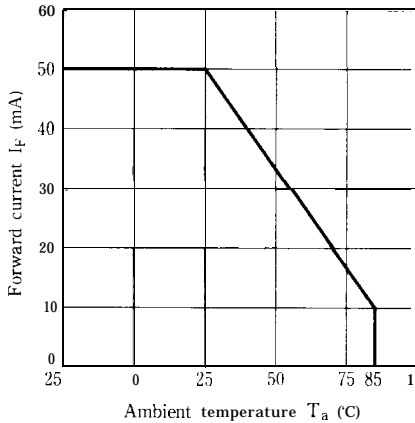


Fig. 2 Power Dissipation vs. Ambient Temperature

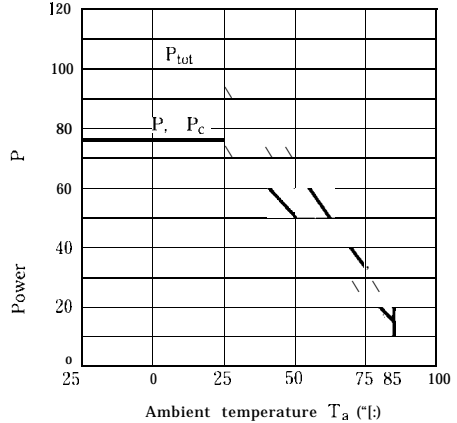


Fig. 3 Forward Current vs. Forward Voltage

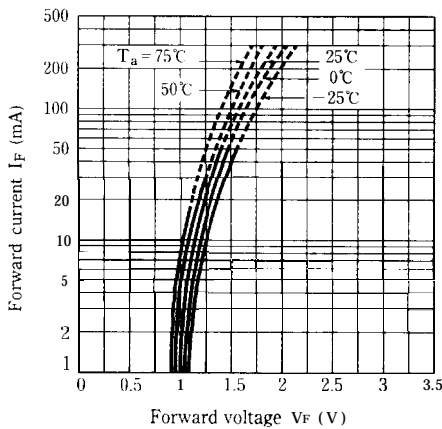


Fig. 4 Collector Current vs. Forward Current

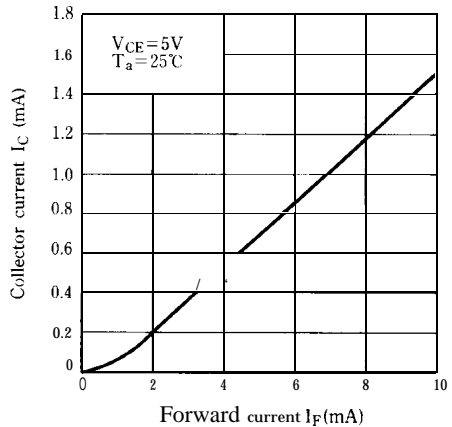


Fig. 5 Collector Current vs. Collector-emitter Voltage

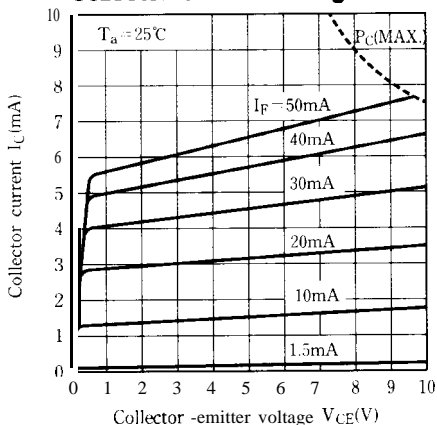


Fig. 6 Collector Current vs. Ambient Temperature

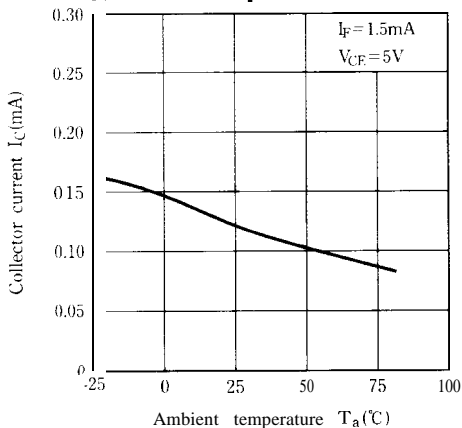


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

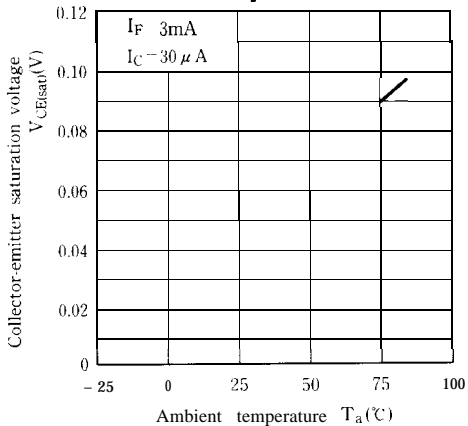


Fig. 8 Collector Dark Current vs. Ambient Temperature

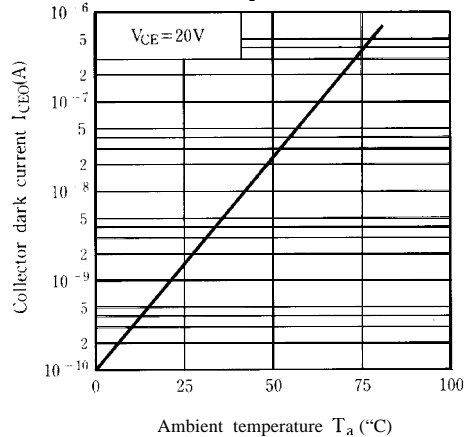
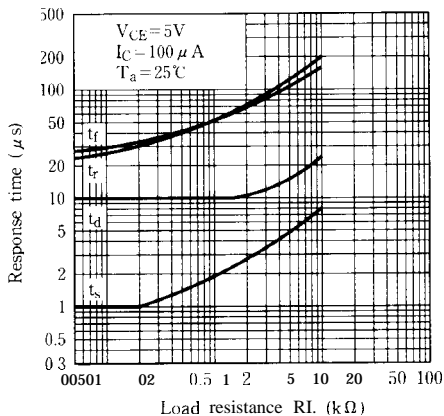


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

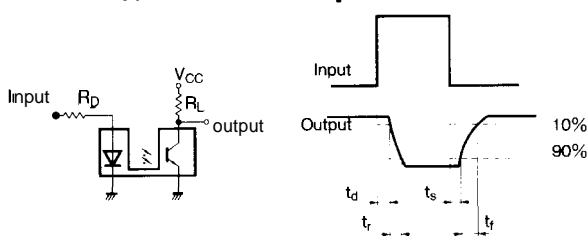


Fig.10 Relative Collector Current vs. Shield Distance (1)

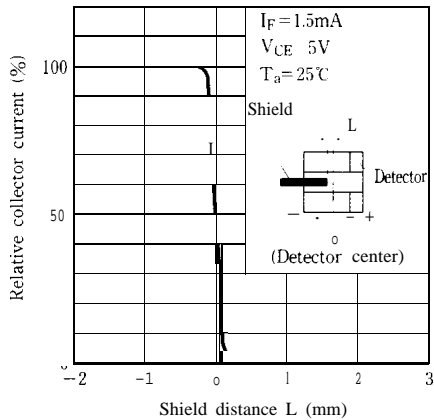
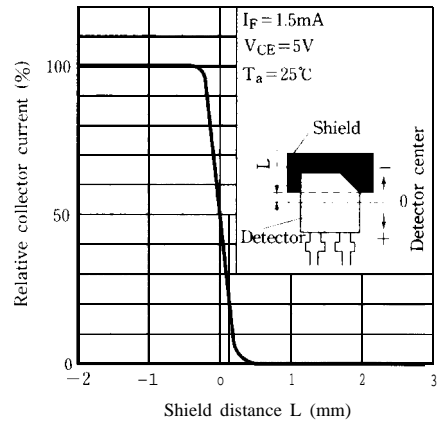


Fig.11 Relative Collector current vs. Shield Distance (2)



■ Precautions for use

- (1) Please refrain from soldering under preheating and refrain from soldering by reflow.
- (2) As for other general cautions, refer to the chapter "Precautions for Use" (Page 78 to 93).