GP1S53V/GP1S58V

Compact Photointerrupter

■ Features

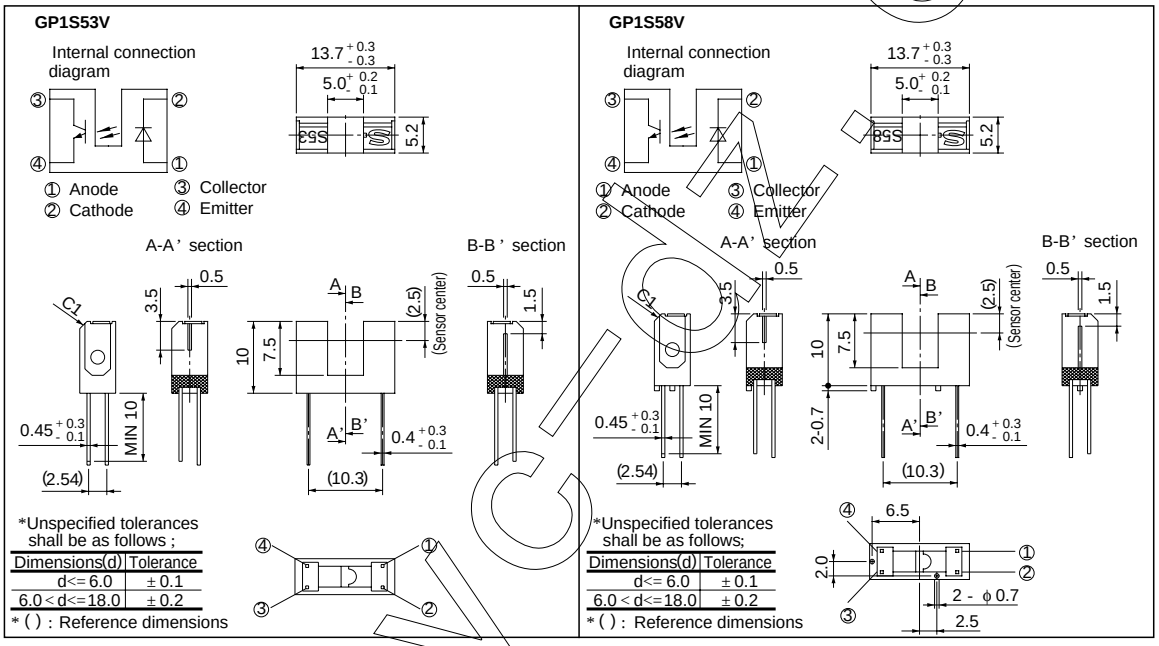
1. Compact type
2. High sensing accuracy（Slit width：0.5mm）
3. PWB direct mounting type
4. With positioning pin（**GP1S58V**）

■ Applications

1. OA equipment, such as FDDs, printers, facsimiles
2. VCRs
3. Optoelectronic switches

■ Outline Dimensions

（Unit：mm）



■ Absolute Maximum Ratings （Ta= 25˚C）

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak forward current	I_{FM}	1	A
	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
	Operating temperature	T_{opr}	- 25 to + 85	˚C
	Storage temperature	T_{stg}	- 40 to + 100	˚C
	*2Soldering temperature	T_{sol}	260	˚C

*1 Pulse width <=100μs, Duty ratio= 0.01
*2 For 5 seconds

■ Electro-optical Characteristics

(Ta = 25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA	-	1.25	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} = 0.5A	-	3	4	V
	Reverse current		I_R	V_R = 3V	-	-	10	μA
Output	Collector dark current		I_{CEO}	V_{CE} = 20V	-	1	100	nA
Transfer characteristics	Collector Current		Ic	I_F = 20mA, V_{CE} = 5V	0.5	-	1.5	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 40mA, I_C = 0.2mA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA	-	3	15	μs
		Fall time	t_f	R_L = 100Ω	-	4	20	μs

Fig. 1 Forward Current vs. Ambient Temperature

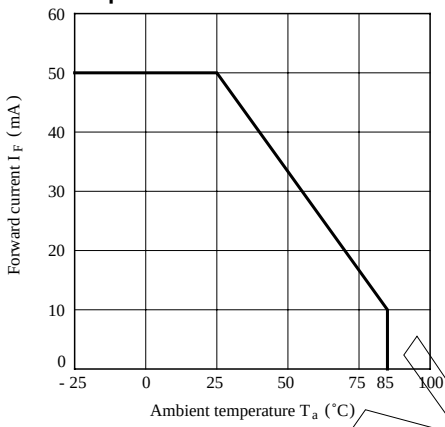


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

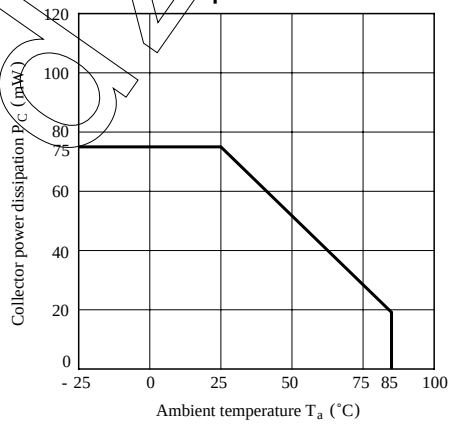


Fig. 3 Peak Forward Current vs. Duty Ratio

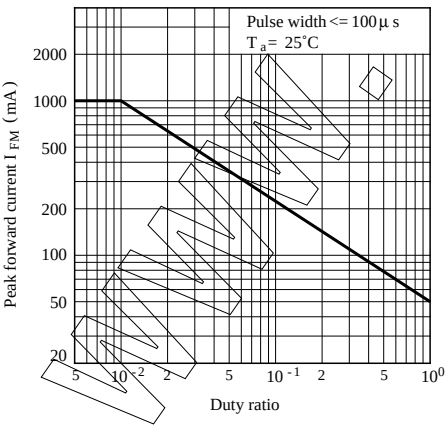


Fig. 4 Forward Current vs. Forward Voltage

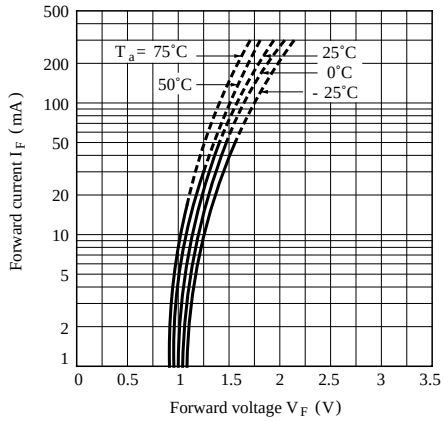


Fig. 5 Collector Current vs. Forward Current

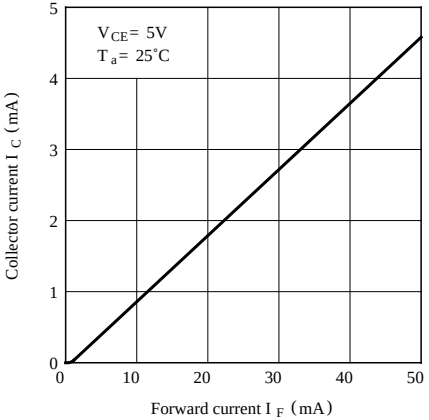


Fig.6 Collector Current vs. Collector-emitter Voltage

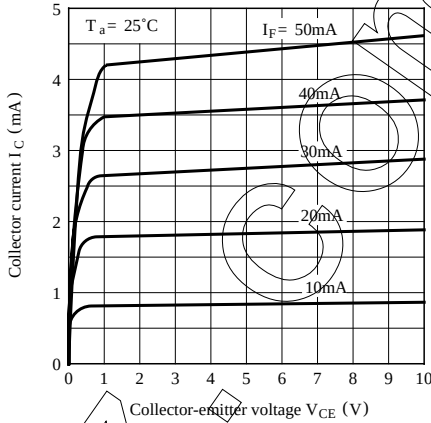


Fig. 7 Collector Current vs. Ambient Temperature

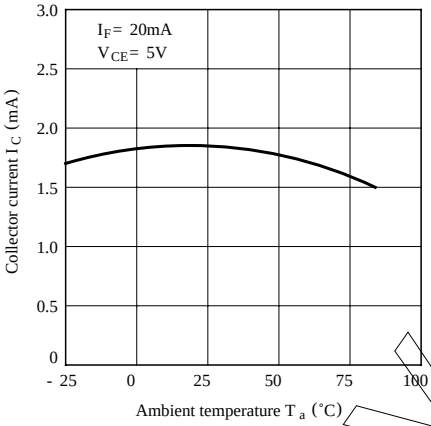


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

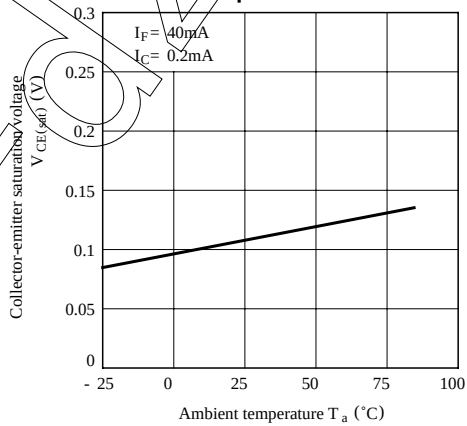
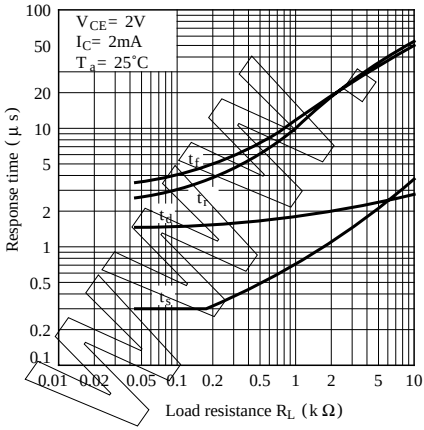


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

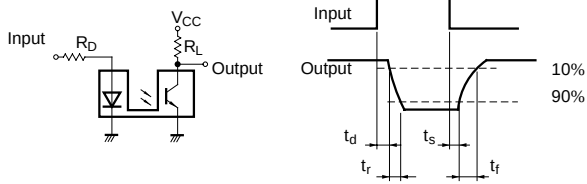


Fig.10 Frequency Response

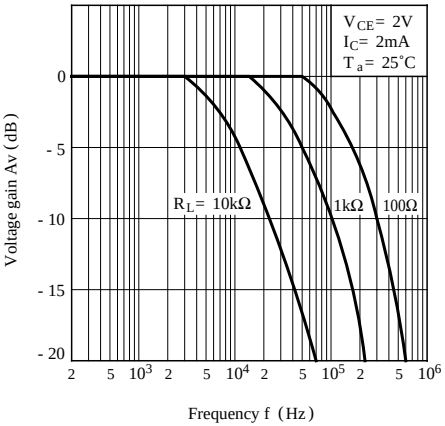


Fig.11 Collector Dark Current vs. Ambient Temperature

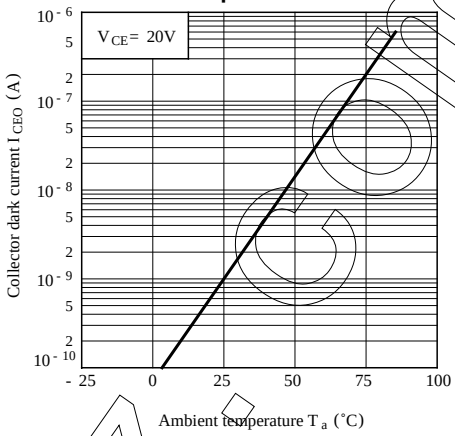


Fig.12 Relative Collector Current vs. Shield Distance (1)

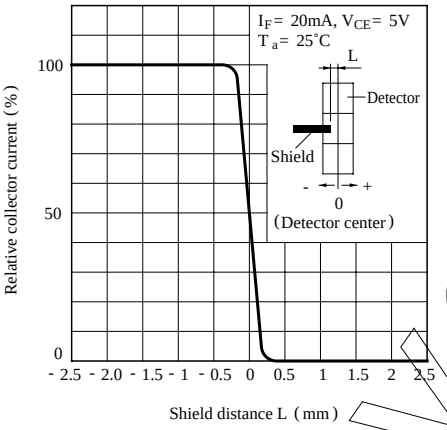
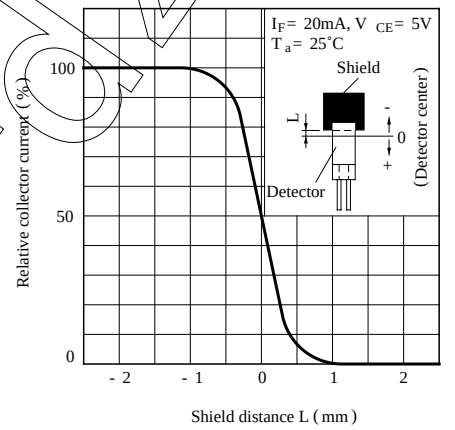


Fig.13 Relative Collector Current vs. Shield Distance (2)



■ Precautions for Use

(1) In case of cleaning, use only the following type of cleaning solvent.
Ethyl alcohol, methyl alcohol, Isopropyl alcohol

(2) As for other general cautions, refer to the chapter "Precautions for Use".

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- Various safety devices, etc.

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