

GP1S50/GP1S51V GP1S52V/GP1S54

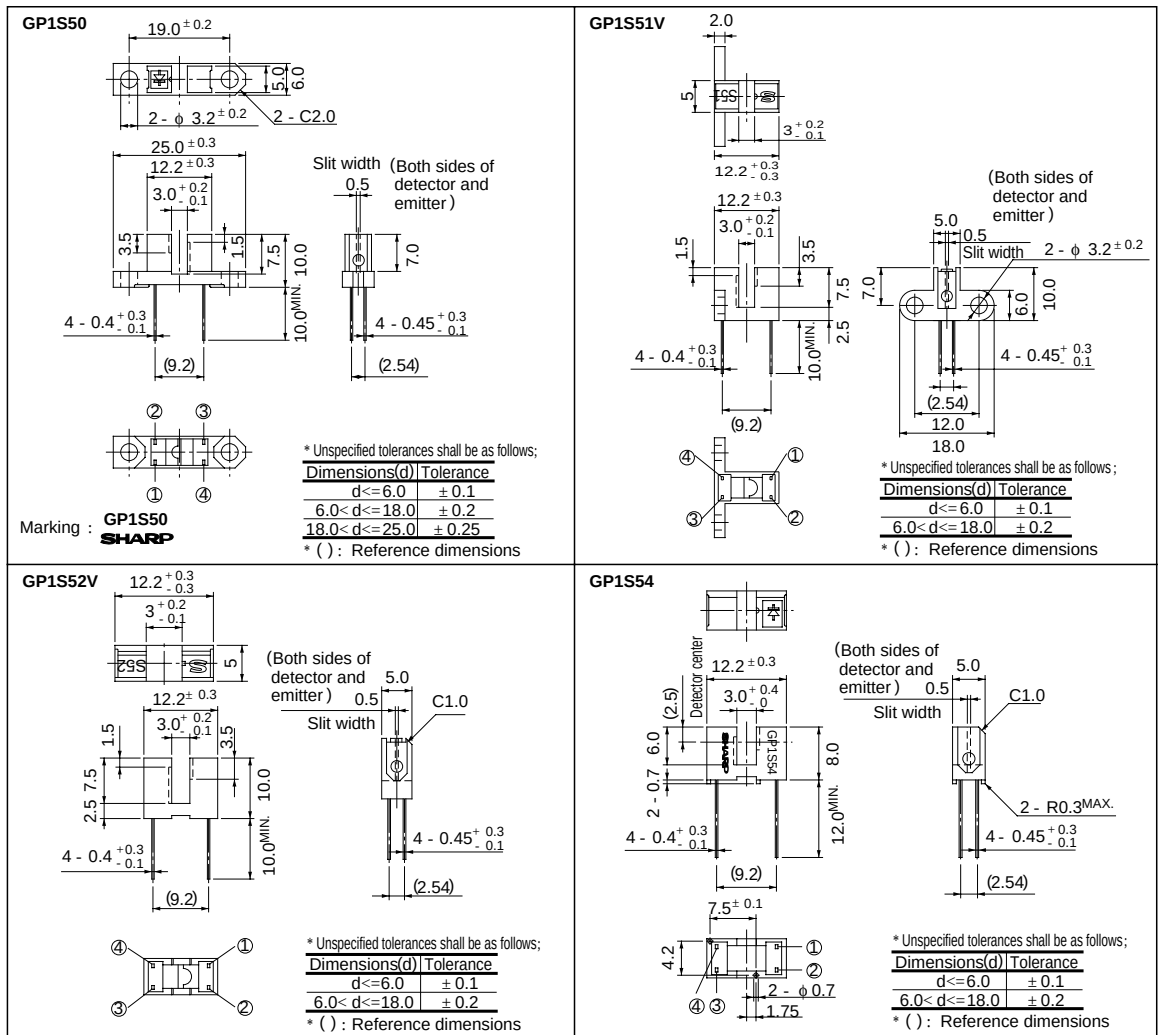
General Purpose Photointerrupter

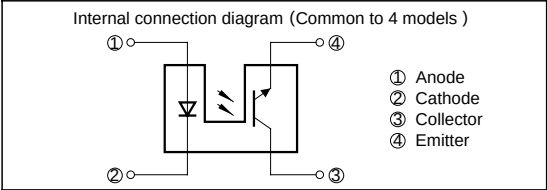
■ Features

1. High sensing accuracy (Slit width : 0.5mm)
2. Both-sides mounting type : **GP1S50** (Case height : 10mm)
Either-side mounting type : **GP1S51V** (Case height : 10mm)
PWB direct mounting type : **GP1S52V** (Case height : 10mm)
PWB direct mounting type : **GP1S54** (Case height : 8mm)

■ Outline Dimensions

(Unit : mm)





■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	*1Peak forward current	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	VCEO	35	V
	Emitter-collector voltage	VECO	6	V
	Collector current	IC	20	mA
	Collector power dissipation	PC	75	mW
Operating temperature		Topr	- 25 to + 85	°C
Storage temperature		Tstg	- 40 to + 100	°C
*2 Soldering temperature		Tsol	260	°C

*1 Pulse width<=100μ s, Duty ratio= 0.01

*2 For 5 seconds

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	GP1S50/ GP1S51V/ GP1S52V	VF	IF = 20mA	-	1.25	1.4	V
		GP1S54			-	1.2	1.4	
	Peak forward voltage		VFM	IFM = 0.5A	-	3	4	V
	Reverse current		IR	VR = 3V	-	-	10	μ A
Output	Collector dark current		ICEO	VCE = 20V	-	1	100	nA
Transfer characteristics	Collector Current		IC	IF = 20mA, VCE = 5V	0.5	-	5	mA
	Collector-emitter saturation voltage		VCE(sat)	IF = 40mA, IC = 0.5mA	-	-	0.4	V
	Response time	Rise time	tR	VCE = 2V, ICE = 2mA RL = 100 Ω	-	3	15	μ s
		Fall time	tF		-	4	20	μ s

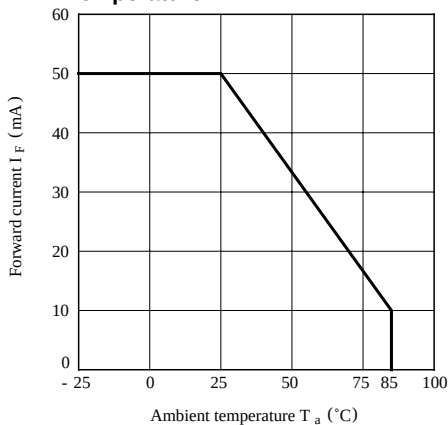
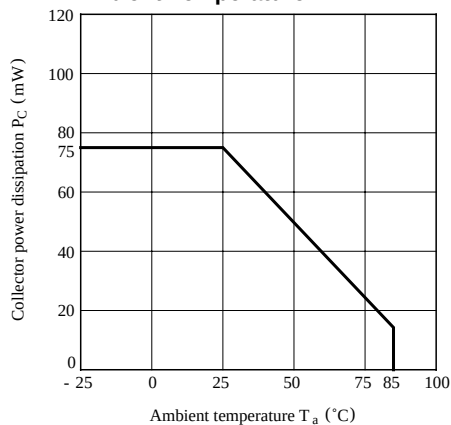
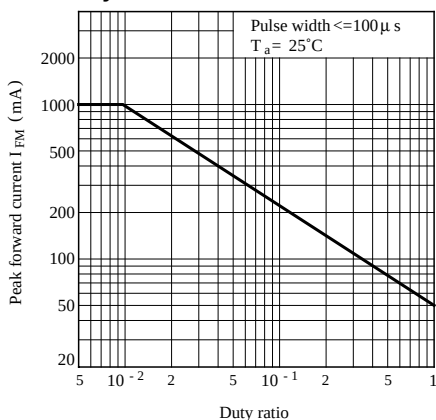
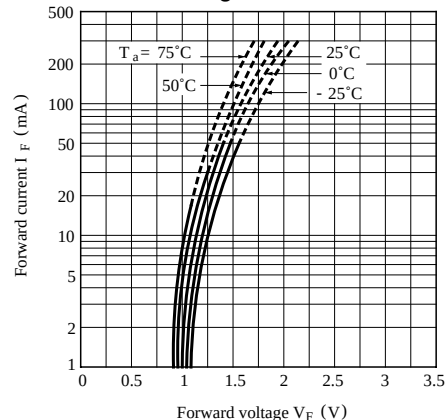
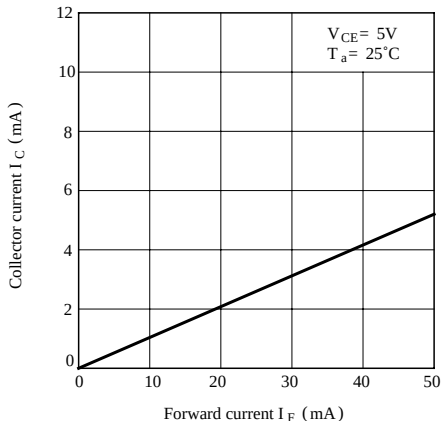
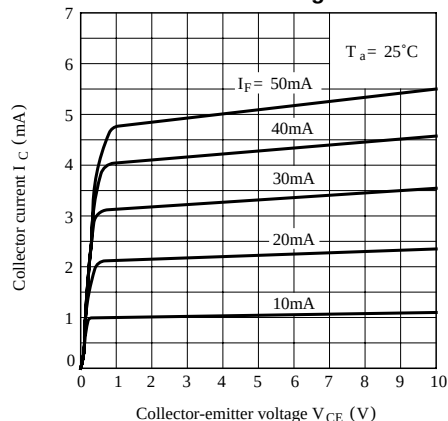
Fig. 1 Forward Current vs. Ambient Temperature**Fig. 2 Collector Power Dissipation vs. Ambient Temperature****Fig. 3 Peak Forward Current vs. Duty Ratio****Fig. 4 Forward Current vs. Forward Voltage****Fig. 5 Collector Current vs. Forward Current****Fig. 6 Collector Current vs. Collector-emitter Voltage**

Fig. 7 Collector Current vs. Ambient Temperature

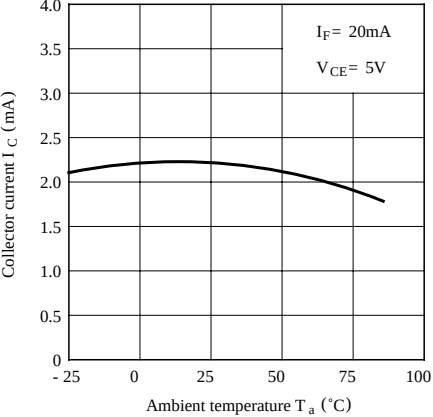


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

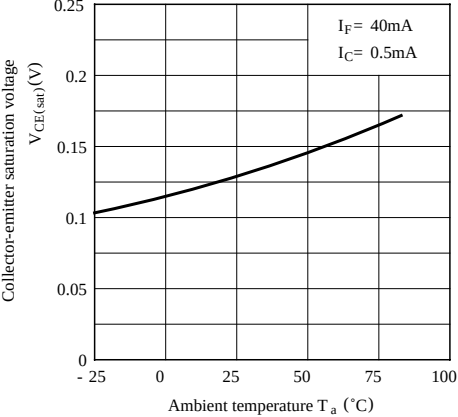
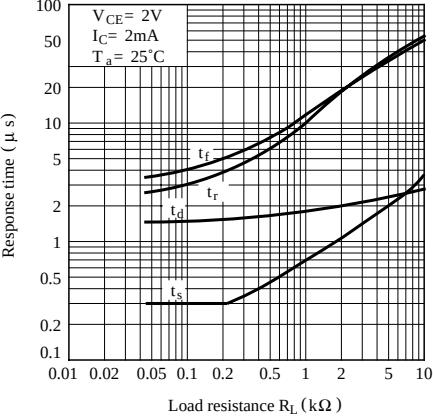


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

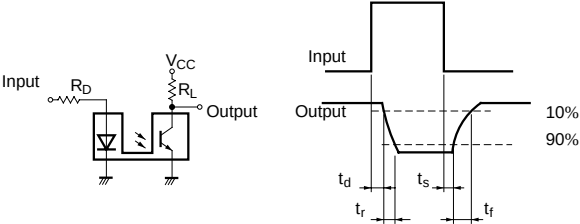


Fig.10 Frequency Response

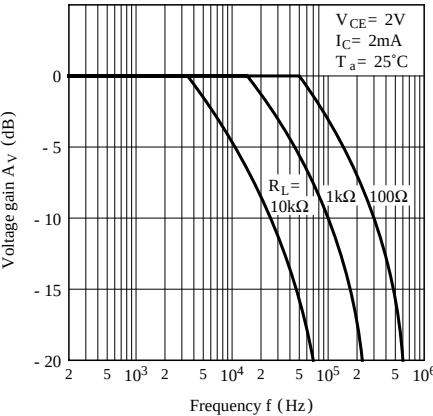


Fig.11 Collector Dark Current vs. Ambient Temperature

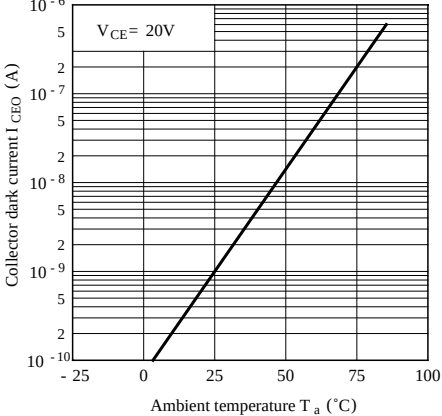


Fig.12 Relative Collector Current vs. Shield Distance (1)

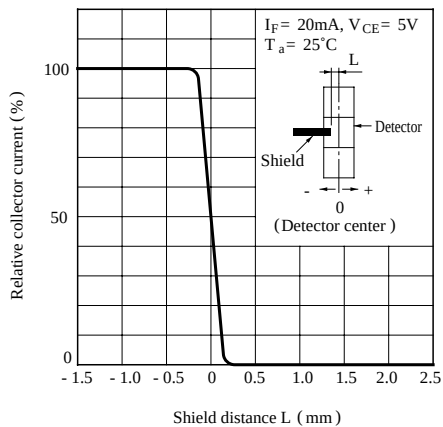
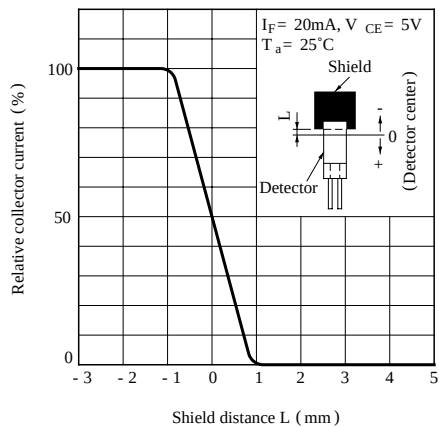


Fig.13 Relative Collector Current vs. Shield Distance (2)



■ Precautions for Use

- (1) In case of cleaning, use only the following type of cleaning solvent.
Ethyl alcohol, methyl alcohol, Isopropyl alcohol
- (2) Please refer to the chapter "Precautions for Use".

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