GP1L50/GP1 L51 GP1L52V/GP1L54

High Sensitivity Photointerrupter

■ Features

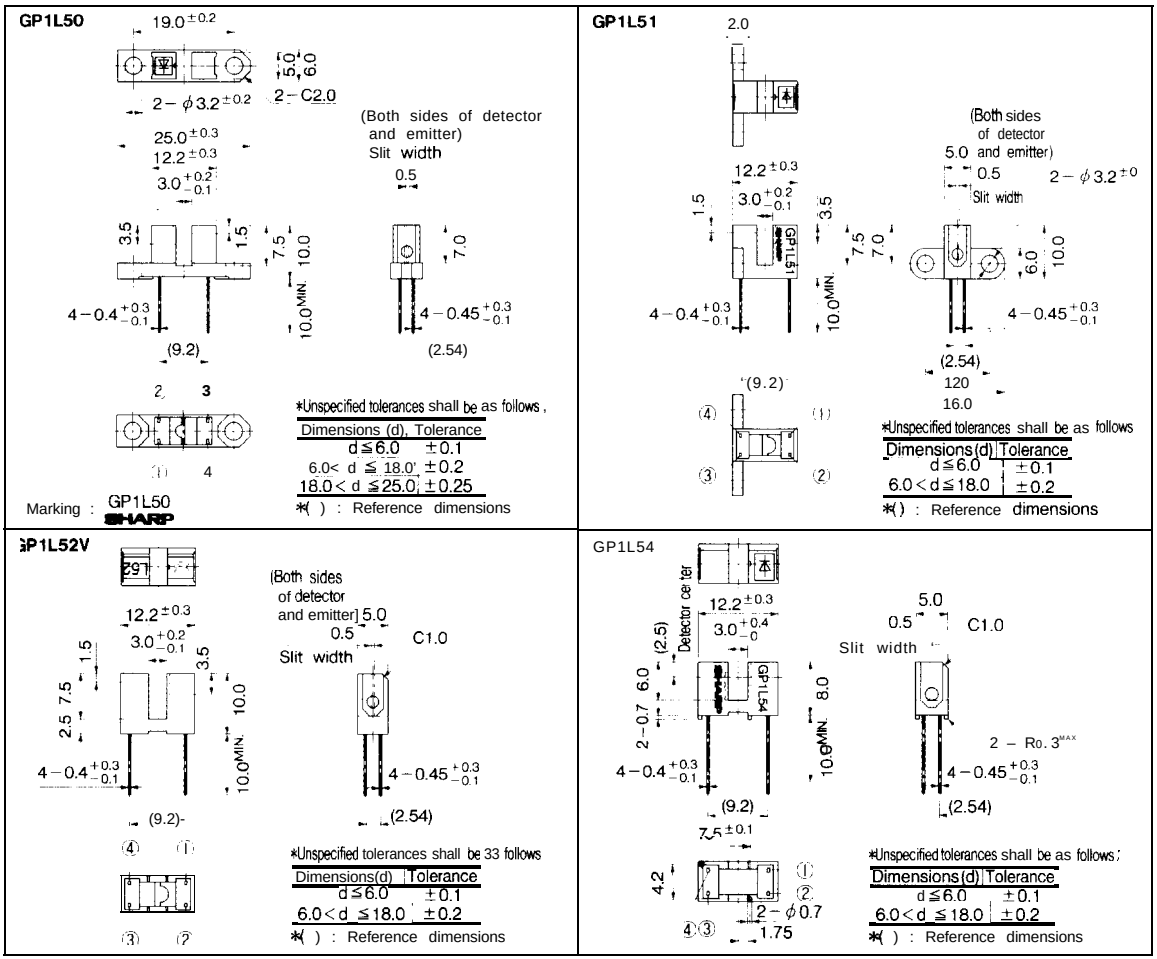
1. High sensing accurancy (Slit width : 0.5mm)
2. High current transfer ratio
   (CTR : MIN. 50% at I_F = 1mA)
3. Both-sides mounting type : **GP1L50** (Case height : 10mm)
   Either-side mounting type : **GP1L51** (Case height : 10mm)
   PWB direct mounting type : **GP1L52V** (Case height : 10mm)
   PWB direct mounting type : **GP1L54** (Case height : 8mm)

■ Applications

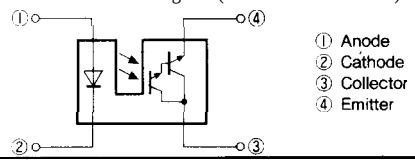
1. OA equipment, such as floppy disk drives, printers, facsimiles, etc.
2. VCRS

■ Outline Dimensions

(Unit : mm)



Internal connection diagram (Common to 4 models)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1 Peak 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	40	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		T_{opr}	--25 to +85	°C
Storage temperature		T_{stg}	-40 to +100	°C
*2 Soldering temperature		T_{sol}	260	°C

*1 Pulse width ≦ 100 μs, 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} = 10V	—		10^{-6}	A
Transfer characteristics	Current transfer ratio		CTR	I_F = 1mA, V_{CE} = 2V	50	—	2000	%
	Collector -emitter saturation voltage		$V_{CE(sat)}$	I_F = 2mA, I_C = 0.5mA			1.0	V
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA		80	400	μs
		Fall time	t_f	R_L = 100Ω		70	300	μs

Fig. 1 Forward Current vs. Ambient Temperature

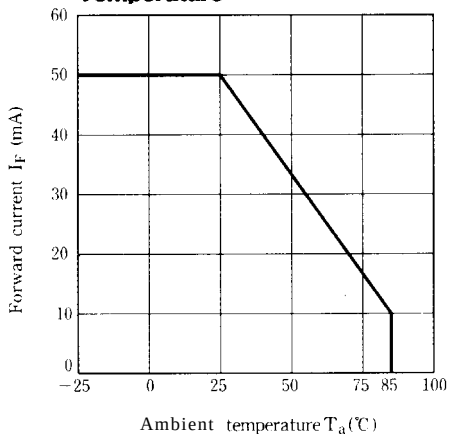
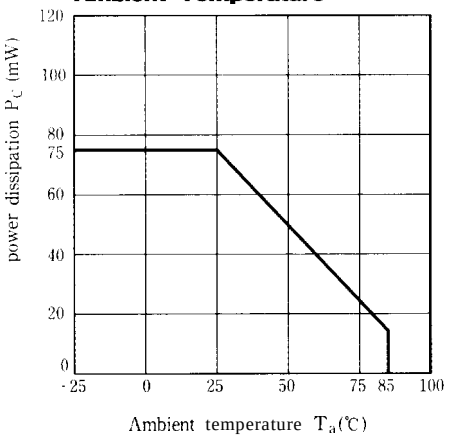


Fig. 2 Collector Power Dissipation vs. Ambient Temperature



8

Fig. 3 Peak Forward Current vs. Duty Ratio

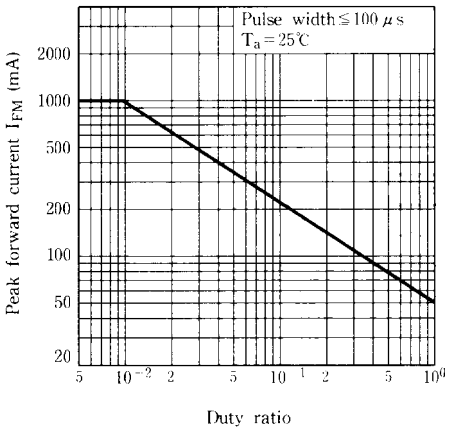


Fig. 4 Forward Current vs. Forward Voltage

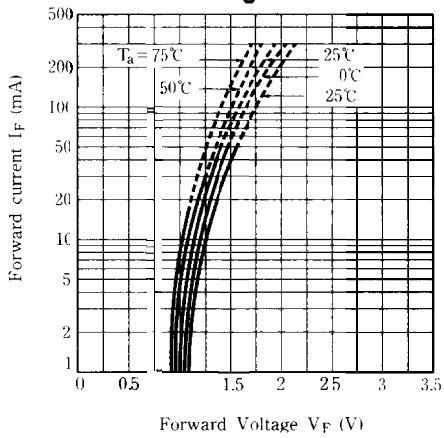


Fig. 5 Collector Current vs. Forward Current

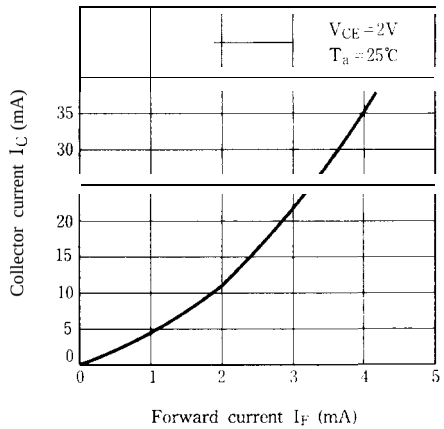


Fig. 6 Collector Current vs. Collector-emitter Voltage

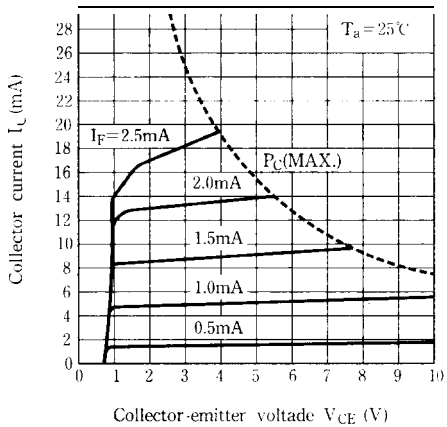


Fig. 7 Collector Current vs. Ambient Temperature

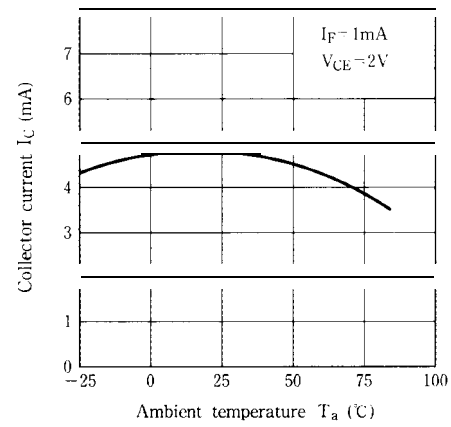


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

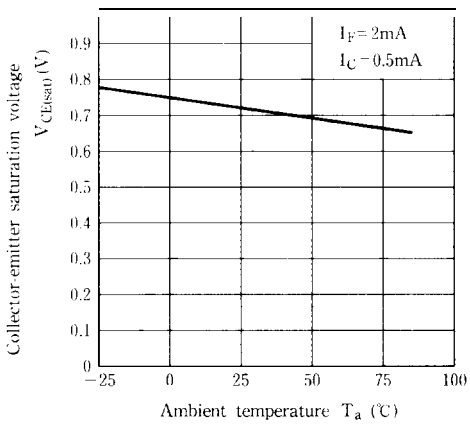
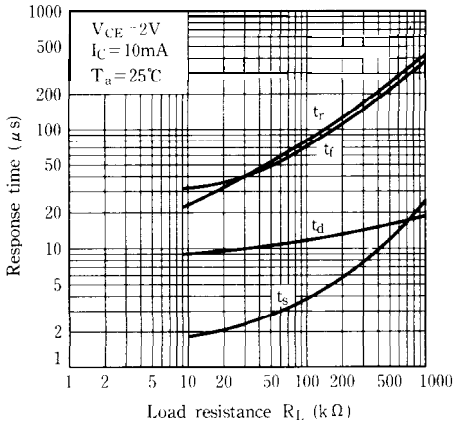


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

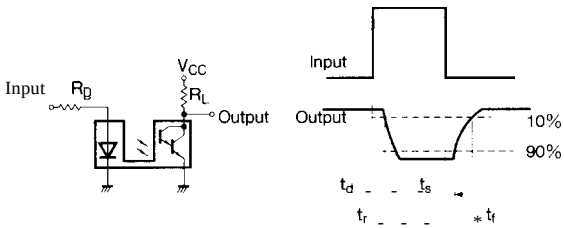


Fig.10 Frequency **Response**

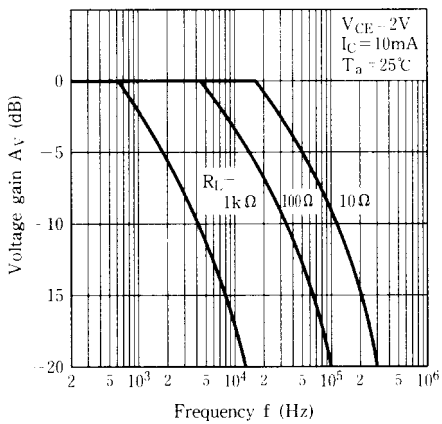


Fig.11 Collector Dark Current vs. Ambient Temperature

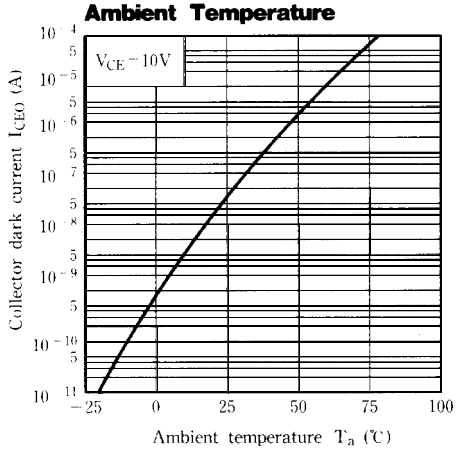


Fig.12 Relative **Collector Current vs. Shield Distance** (1)

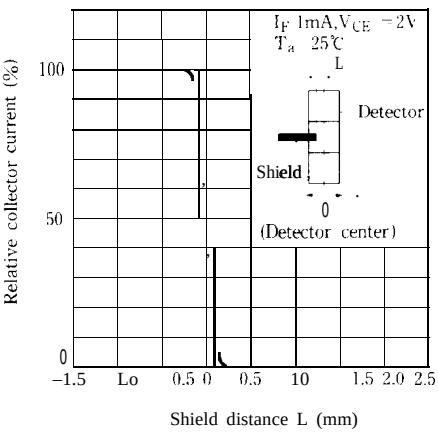
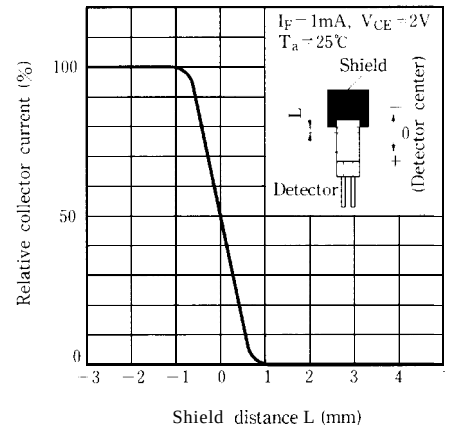


Fig. 13 Relative Collector Current vs. Shield Distance (2)



8

■ Precautions for Use

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

(2) As for other general cautions, refer to the chapter "Precautions for Use" (Page 78 to 93).