

T-41-73

GP1L50/GP1L51 /GP1L52

Compact Type PhotoInterrupter

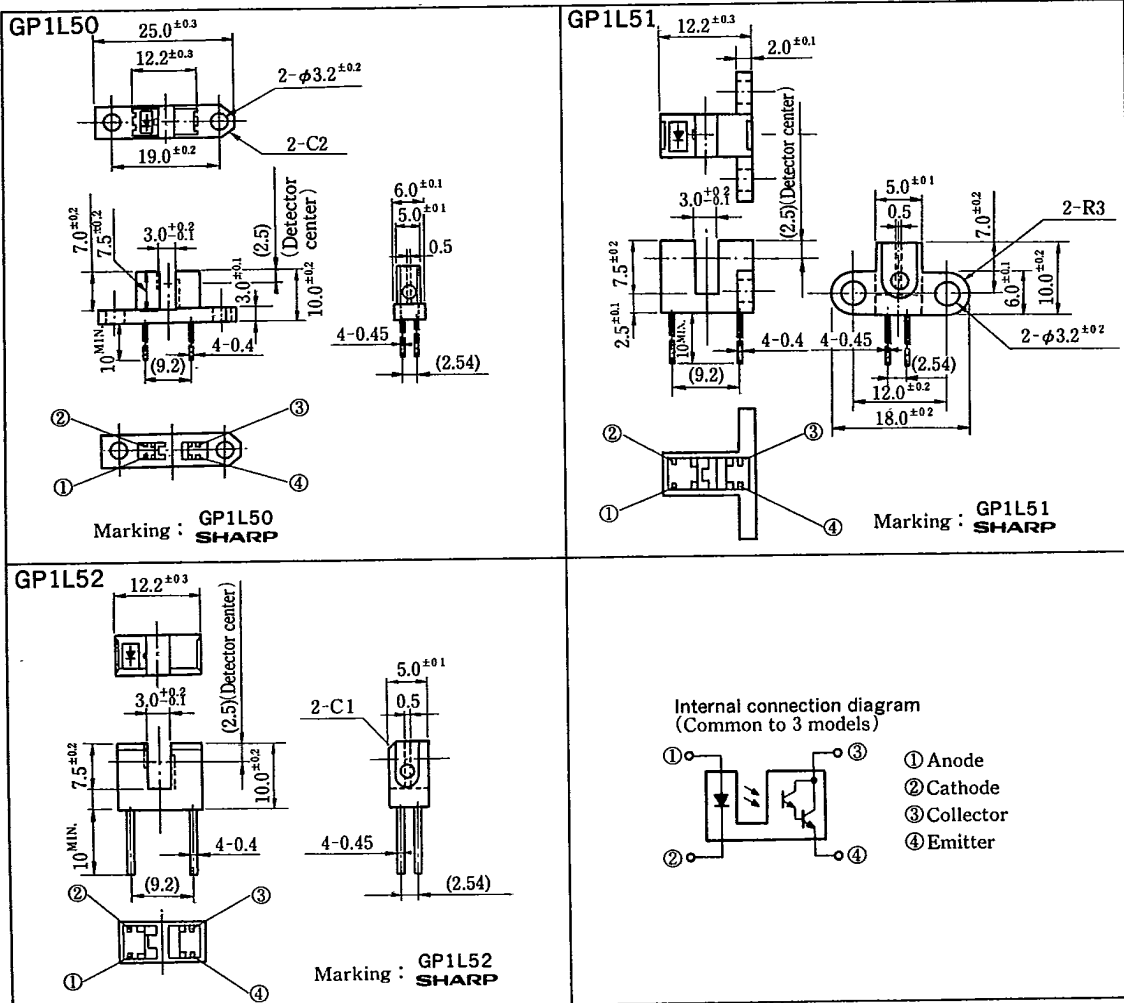
■ Features

1. Compact type
2. High sensing accuracy (Slit width: 0.5mm)
3. High current transfer ratio
(CTR: MIN. 50% at $I_F=1\text{mA}$)
4. Both-sides mounting type: GP1L50
Either-side mounting type: GP1L51
PWB direct mounting type: GP1L52

■ Applications

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

(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	40	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		T_{opr}	-25 ~ +85	°C
Storage temperature		T_{stg}	-40 ~ +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	F_{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	—	2,000	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=2mA, I_C=0.5mA$	—	—	1.0	V
	Response time (Rise)	t_r	$V_{CE}=2V, I_C=2mA$	—	80	400	μs
	Response time (Fall)	t_f	$R_L=100Ω$	—	70	350	μs



Fig. 1 Forward Current vs. Ambient Temperature

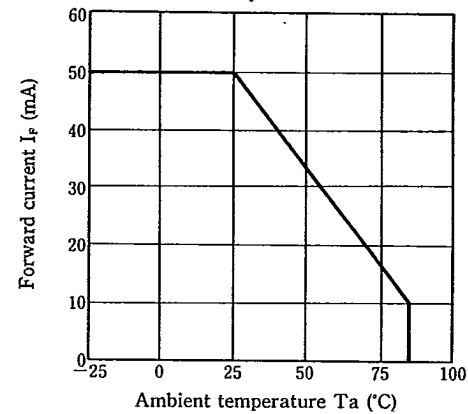


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

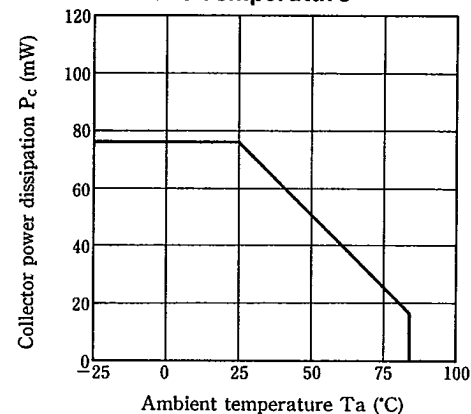


Fig. 3 Peak Forward Current vs. Duty Ratio

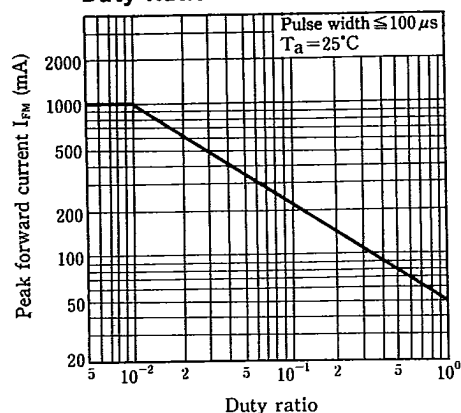


Fig. 4 Forward Current vs. Forward Voltage

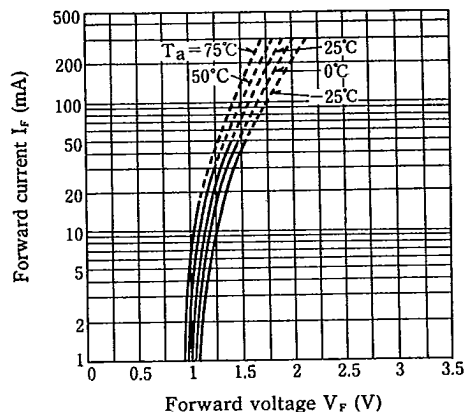


Fig. 5 Collector Current vs. Forward Current

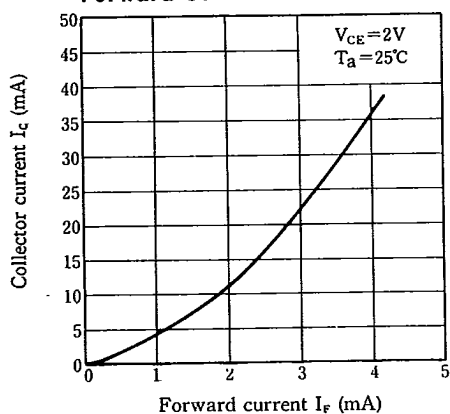


Fig. 6 Collector Current vs. Collector-emitter Voltage

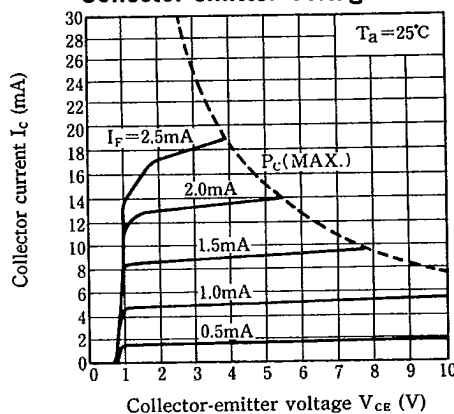


Fig. 7 Collector Current vs. Ambient Temperature

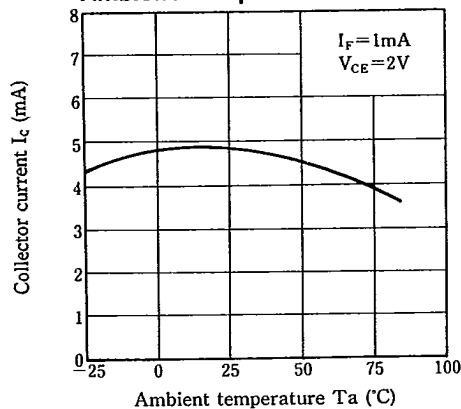


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

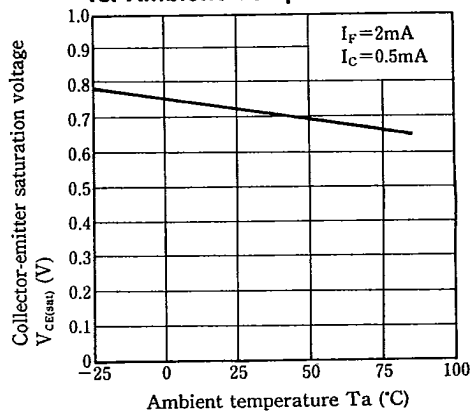
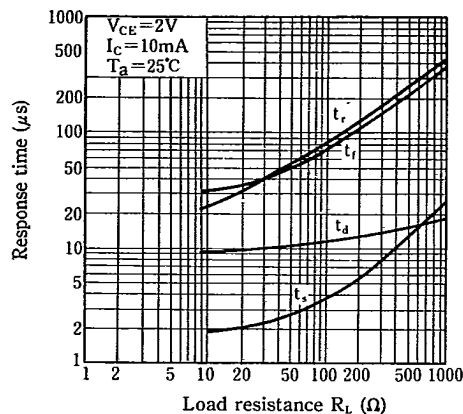


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

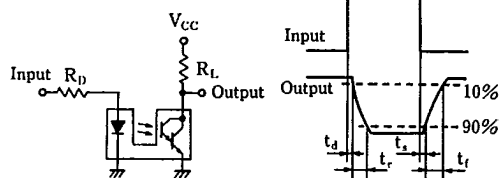


Fig. 10 Frequency Response

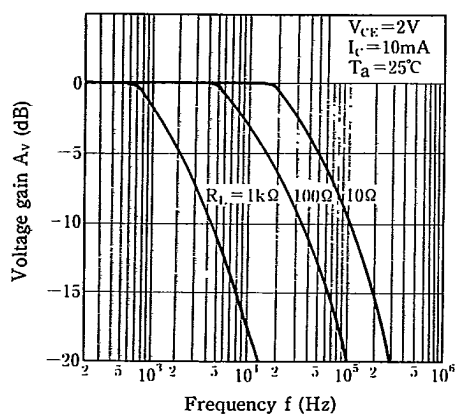


Fig. 11 Collector Dark Current vs. Ambient Temperature

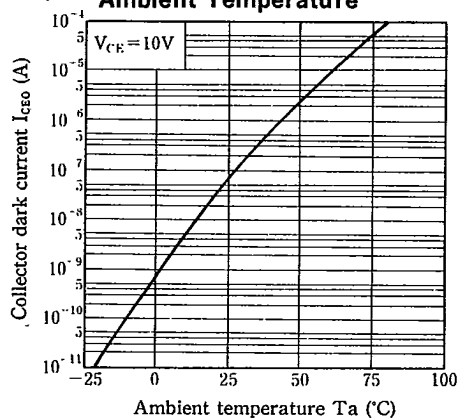


Fig. 12 Relative Collector Current vs. Shield Distance (1)

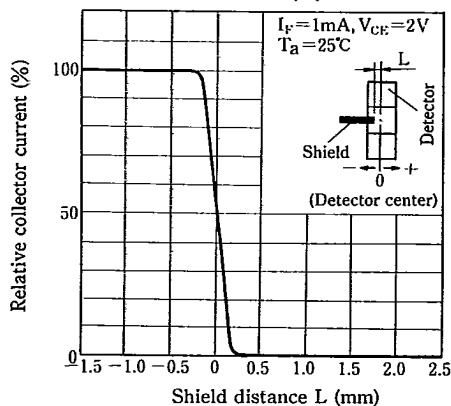
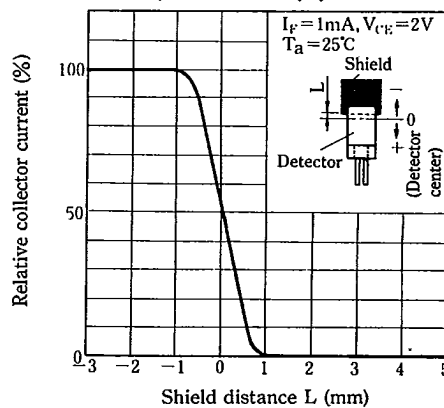


Fig. 13 Relative Collector Current vs. Shield Distance (2)



SHARP