

T-41-73

GP1L50/GP1L51 /GP1L52

Compact Type PhotoInterrupter

■ Features

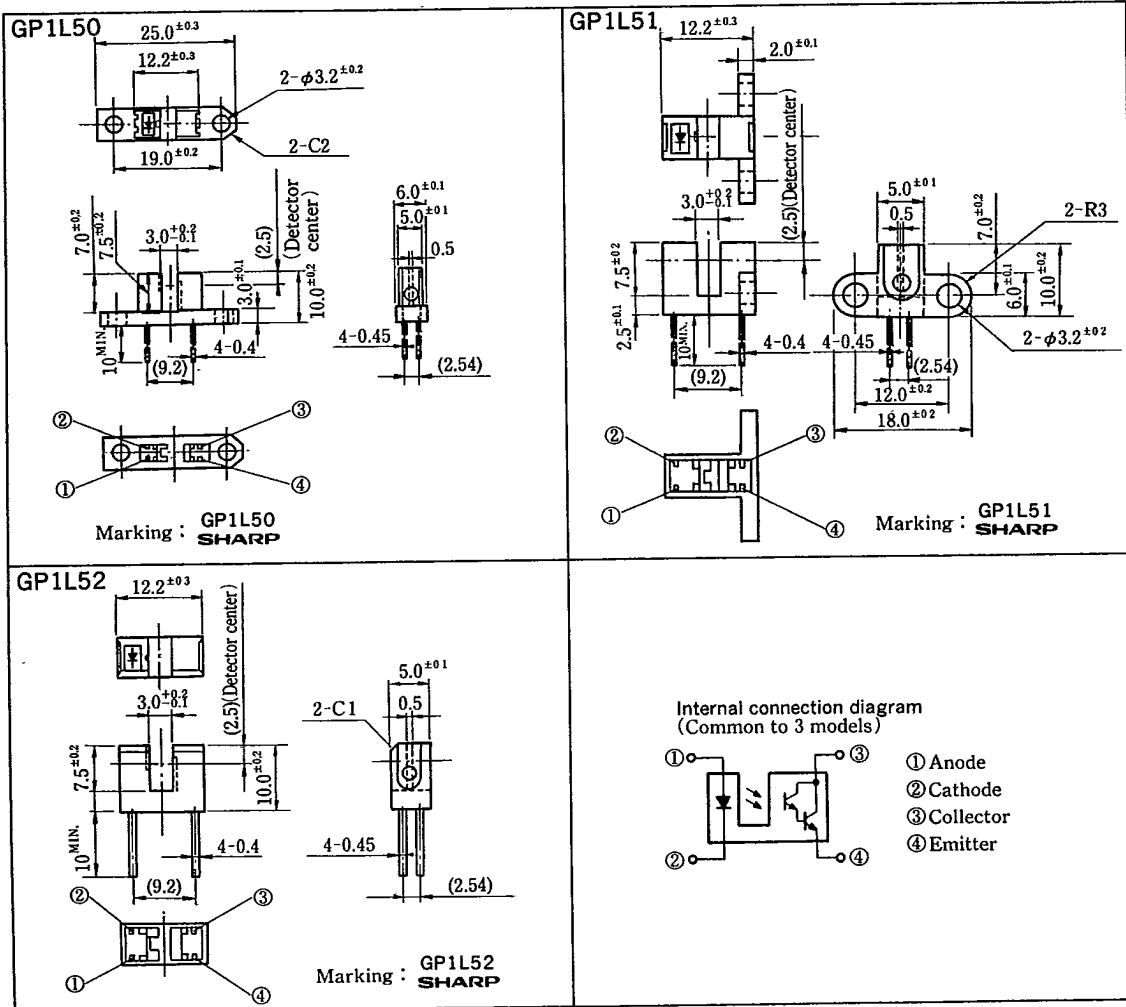
1. Compact type
2. High sensing accuracy (Slit width: 0.5mm)
3. High current transfer ratio (CTR: MIN. 50% at $I_F=1mA$)
4. Both-sides mounting type: GP1L50
 Either-side mounting type: GP1L51
 PWB direct mounting type: GP1L52

■ Applications

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

■ Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

(Ta=25°C)

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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 ~ +85	°C
Storage temperature		T_{stg}	-40 ~ +100	°C
*2 Soldering temperature		T_{sol}	260	°C

*1 Pulse width $\leq 100\mu s$, Duty ratio=0.01

*2 For 5 seconds

Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	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	$R_L = 100\Omega$	—	70	350	μs



Fig. 1 Forward Current vs. Ambient Temperature

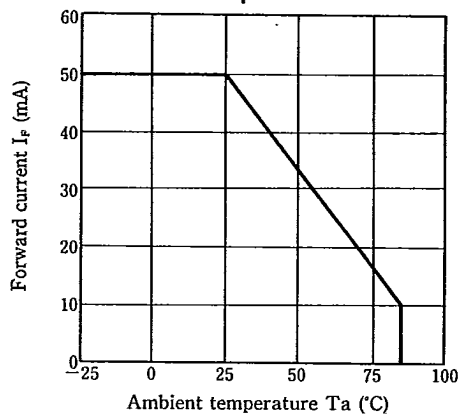
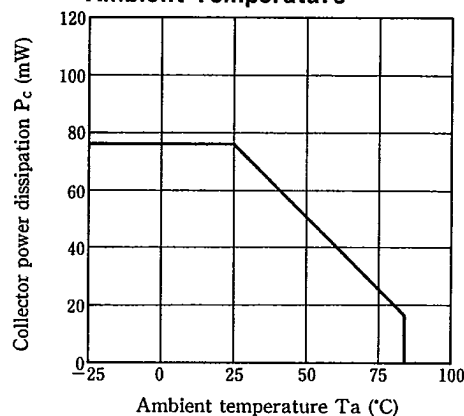


Fig. 2 Collector Power Dissipation vs. Ambient Temperature



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Fig. 3 Peak Forward Current vs. Duty Ratio

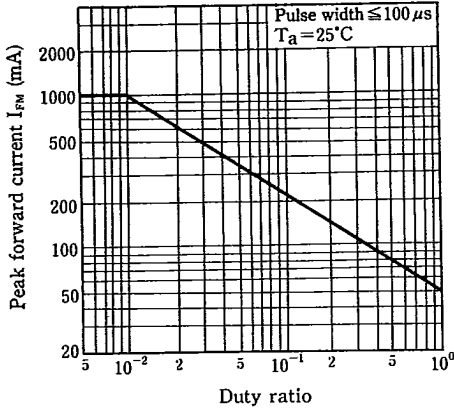


Fig. 4 Forward Current vs. Forward Voltage

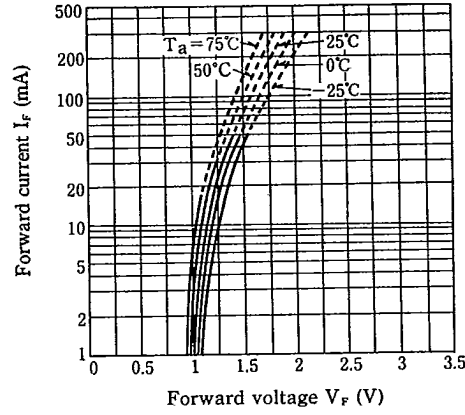


Fig. 5 Collector Current vs. Forward Current

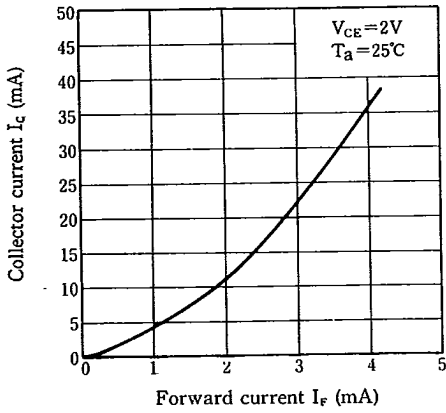


Fig. 6 Collector Current vs. Collector-emitter Voltage

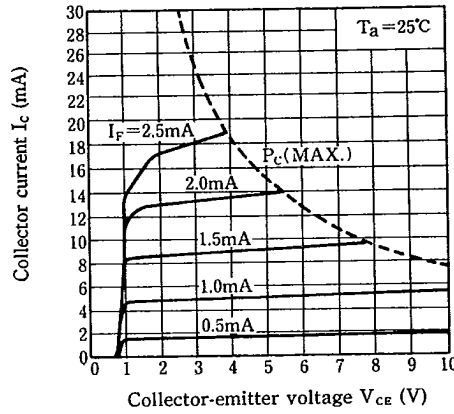


Fig. 7 Collector Current vs. Ambient Temperature

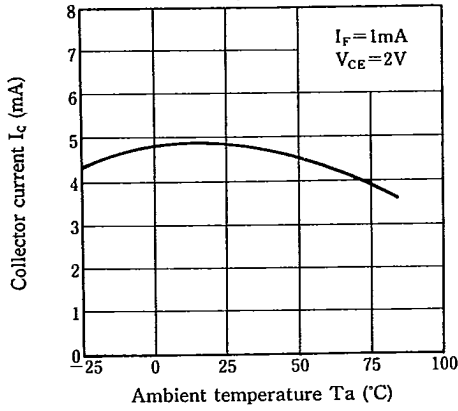
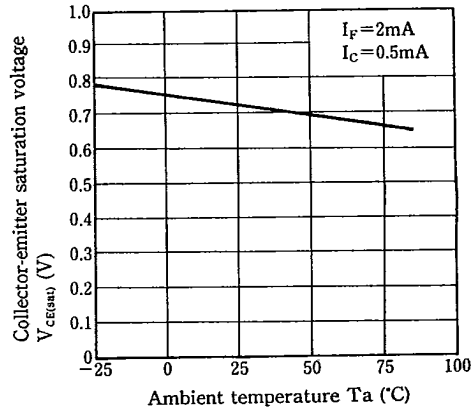
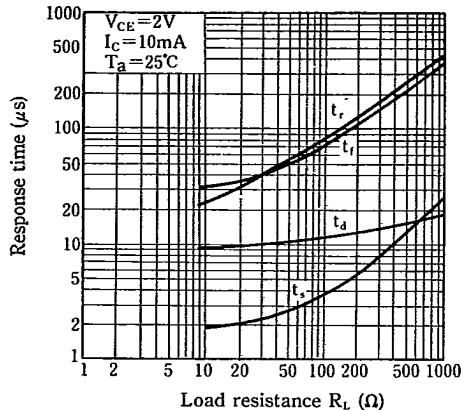


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

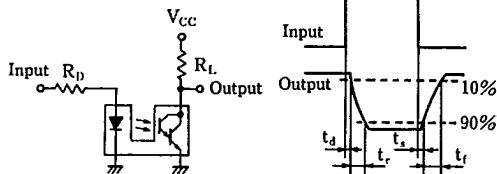


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Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time



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Fig. 10 Frequency Response

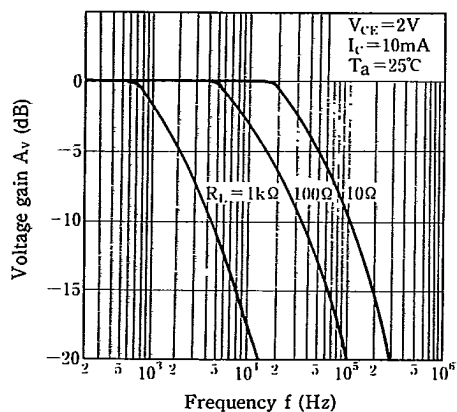


Fig. 11 Collector Dark Current vs. Ambient Temperature

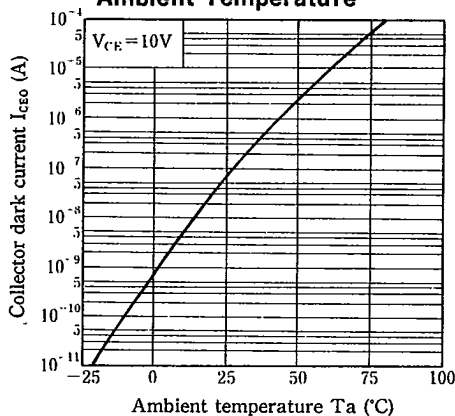


Fig. 12 Relative Collector Current vs. Shield Distance (1)

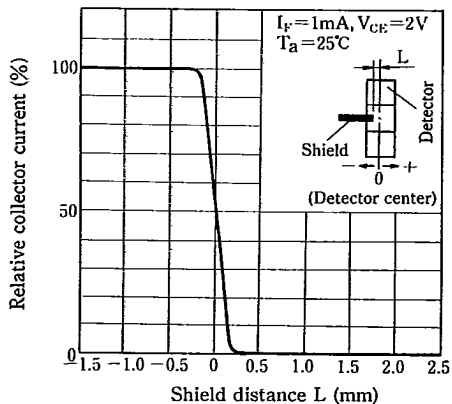


Fig. 13 Relative Collector Current vs. Shield Distance (2)

