

T-41-73

# GP1L02 Photointerrupter

## ■ Features

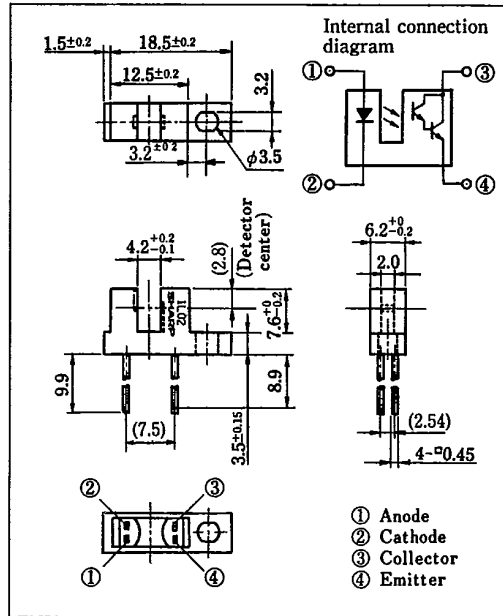
1. High current transfer ratio  
(CTR: MIN. 20% at  $I_F=10\text{mA}$ )
2. Either side installation type package

## ■ Applications

1. VCRs, record players, cassette decks
2. Fan heaters, electronic sewing machines, knitting machines
3. Optoelectronic switches, optoelectronic counters

## ■ Outline Dimensions

(Unit : mm)



## ■ Absolute Maximum Ratings

( $T_a=25^\circ\text{C}$ )

	Parameter	Symbol	Rating	Unit
Input	Forward current	$I_F$	65	mA
	*1 Peak forward current	$I_{FM}$	1	A
	Reverse voltage	$V_R$	6	V
	Power dissipation	$P$	100	mW
Output	Collector-emitter voltage	$V_{CEO}$	35	V
	Emitter-collector voltage	$V_{ECO}$	6	V
	Collector current	$I_C$	50	mA
	Collector power dissipation	$P_C$	100	mW
	Operating temperature	$T_{opr}$	-25 ~ +85	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
	*2 Soldering temperature	$T_{sol}$	260	$^\circ\text{C}$

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

\*2 For 5 seconds



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(Ta=25°C)

Electro-optical Characteristics

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	$V_F$	$I_F=20\text{mA}$	—	1.2	1.4	V
	Peak forward voltage	$V_{FM}$	$I_{FM}=0.5\text{A}$	—	—	4.0	V
	Reverse current	$I_R$	$V_R=4\text{V}$	—	—	20	$\mu\text{A}$
Output	Collector dark current	$I_{CBO}$	$V_{CE}=10\text{V}, I_F=0$	—	—	$4 \times 10^{-7}$	A
	Current transfer ratio	CTR	$I_F=10\text{mA}, V_{CE}=2\text{V}$	20	—	150	%
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=10\text{mA}, I_C=0.5\text{mA}$	—	—	1.2	V
	Response time (Rise)	$t_r$	$I_C=10\text{mA}, V_{CE}=2\text{V}, R_L=100\Omega$	—	130	520	$\mu\text{s}$
	Response time (Fall)	$t_f$		—	100	400	$\mu\text{s}$

Fig. 1 Forward Current vs. Ambient Temperature

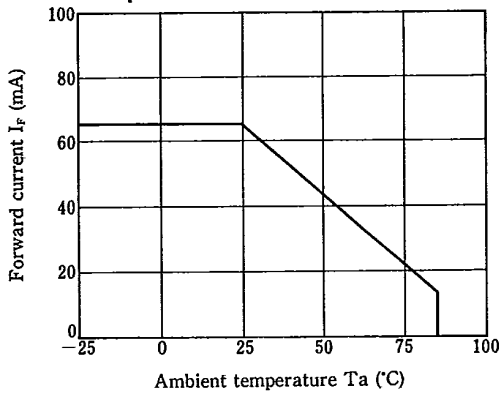


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

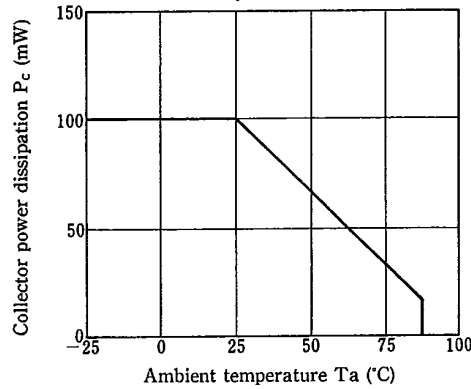


Fig. 3 Peak Forward Current vs. Duty Ratio

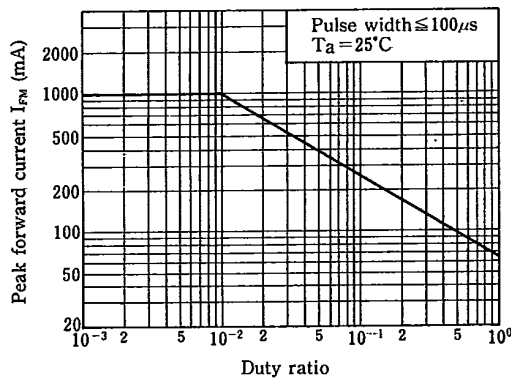
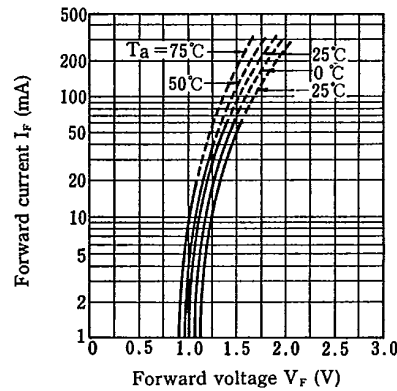


Fig. 4 Forward Current vs. Forward Voltage



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Fig. 10 Frequency Response

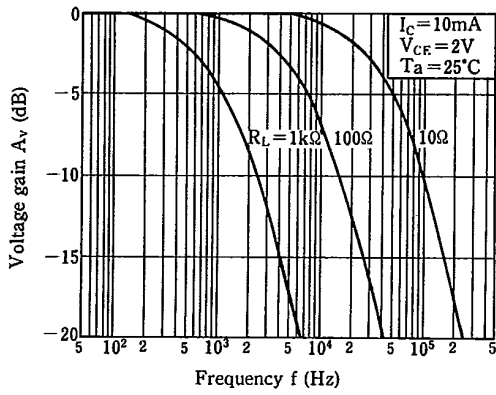


Fig. 11 Collector Dark Current vs. Ambient Temperature

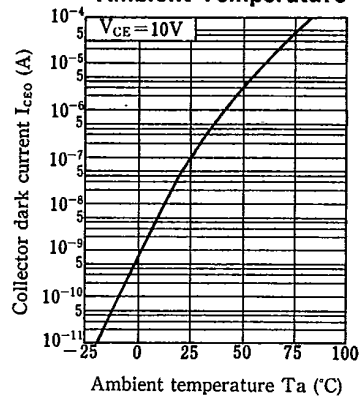


Fig. 12 Relative Collector Current vs. Shield Distance (1)

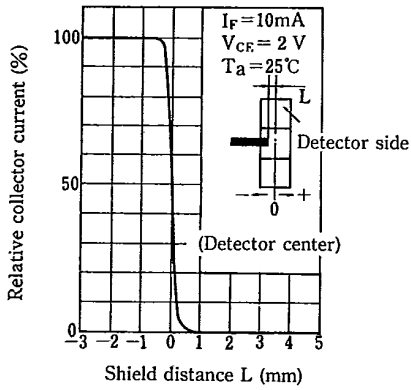


Fig. 13 Relative Collector Current vs. Shield Distance (2)

