

SHARP ELEK/ MELEC DIV 1.5E D 8180798 0003263 4

GP1L02

T-41-73

GP1L02 Photointerrupter

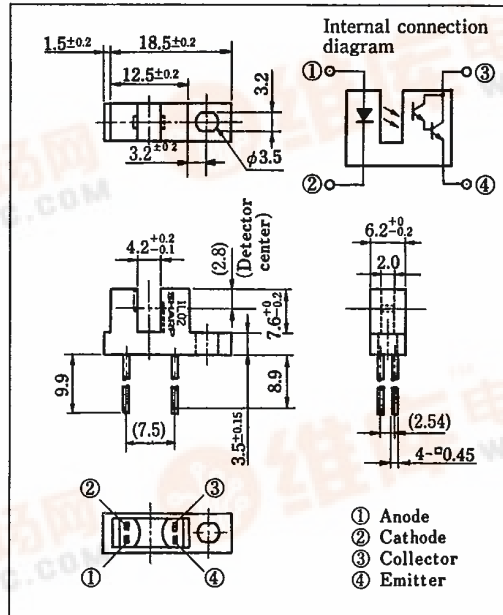
Features

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
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
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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Electro-optical Characteristics

(Ta=25°C)

	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	μA
Output	Collector dark current	I_{CEO}	$V_{CE}=10\text{V}, I_F=0$	—	—	4×10^{-7}	A
Transfer characteristics	Current transfer ratio	CTR	$I_F=10\text{mA}, V_{CE}=2\text{V}$	20	—	150	%
	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	μs
	Response time (Fall)	t_f		—	100	400	μs

Fig. 1 Forward Current vs. Ambient Temperature

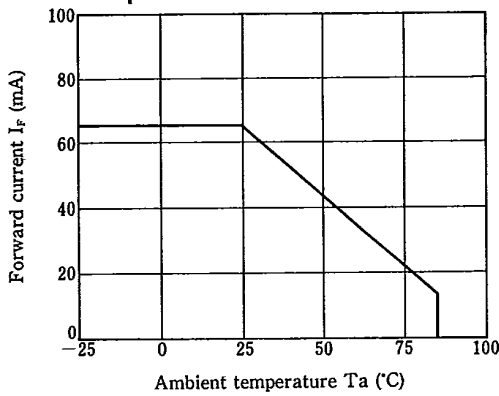


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

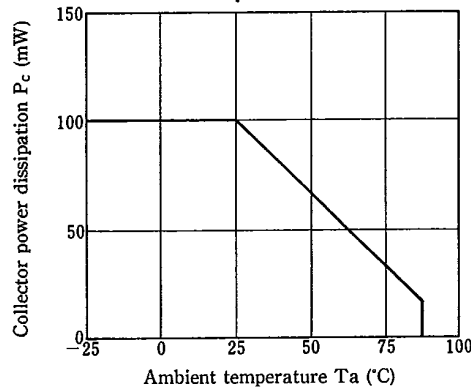


Fig. 3 Peak Forward Current vs. Duty Ratio

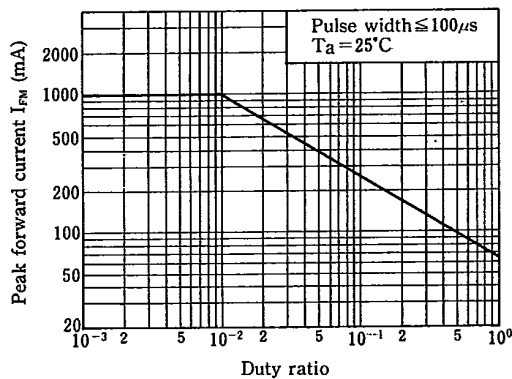
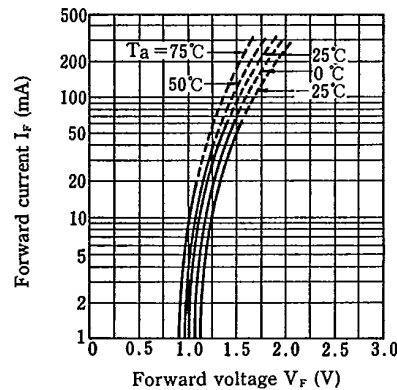


Fig. 4 Forward Current vs. Forward Voltage



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Fig. 10 Frequency Response

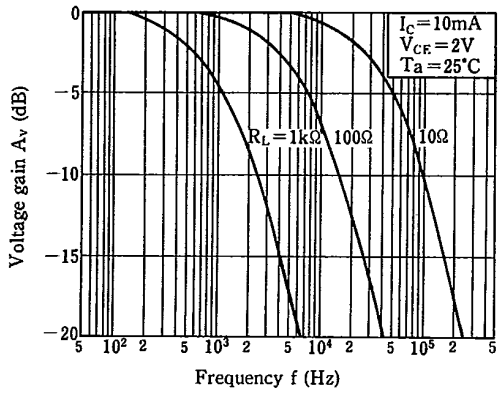


Fig. 11 Collector Dark Current vs. Ambient Temperature

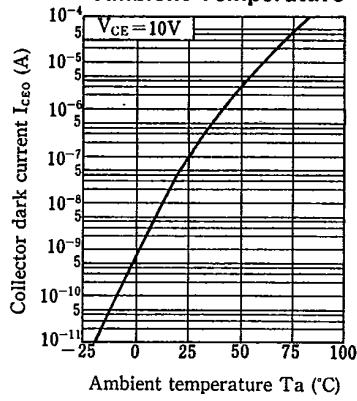


Fig. 12 Relative Collector Current vs. Shield Distance (1)

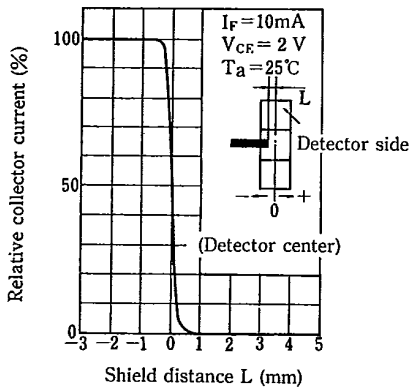


Fig. 13 Relative Collector Current vs. Shield Distance (2)

