GP1L50/GP1L51 GP1L52V/GP1L54

Features

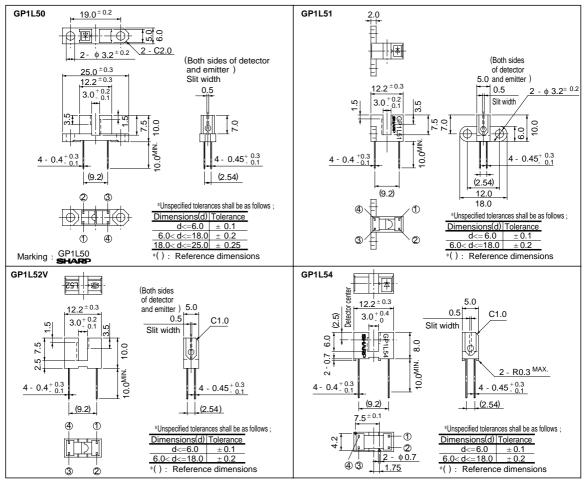
- 1. High sensing accuracy(Slit width:0.5mm)
- 2. High current transfer ratio
 - (CTR: MIN. 50% at I $_{F}$ = 1mA)
- 3. Both-sides mounting type: GP1L50 (Case height: 10mm)
 Either-side mounting type: GP1L51 (Case height: 10mm)
 PWB direct mounting type: GP1L52V (Case height: 10mm)
 PWB direct mounting type: GP1L54 (Case height: 8mm)
- Outline Dimensions

High Sensitivity Photointerrupter

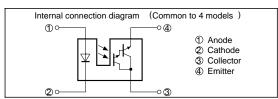
Applications

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

(Unit: mm)



" In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."



Absolute Maximum Ratings

 $(Ta = 25^{\circ}C)$

	Parameter	Symbol	Rating	Unit	
Input	Forward current	IF	50	mA	
	*1Peak forward current	I _{FM}	1	А	
	Reverse voltage	VR	6	5 V	
	Power dissipation	Р	75	mW	
	Collector-emitter voltage	V _{CEO}	35	V	
Output	Emitter-collector voltage	V _{ECO}	6	V	
Output	Collector current	I _C	40	mA	
	Collector power dissipation	Pc	75	mW	
	Operating temperature	Topr	T _{opr} - 25 to + 85		
Storage temperature		Tstg	- 40 to + 100	°C	
*2Soldering temperature		T _{sol}	260	°C	

*1 Pulse width<= 100 µ s, Duty ratio= 0.01

*2 For 5 seconds

■ Electro-optical Characteristics

 $(Ta = 25^{\circ}C)$

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage		VF	$I_F = 20 m A$	-	1.25	1.4	V
	Peak forward voltage		V _{FM}	$I_{FM}=0.5A$	-	3	4	V
	Reverse current		IR	$V_R = 3V$	-	-	10	μΑ
Output	Collector dark current		I _{CEO}	$V_{CE} = 10V$	-	-	10-6	А
Transfer charac- teristics	Collector Current		Ic	$I_F = 1mA$, $V_{CE} = 2V$	0.5	-	20	mA
	Collector-emitter saturation voltage		V _{CE(sat)}	$I_F = 2mA$, $I_C = 0.5mA$	-	-	1.0	V
	Response time	Rise time	tr	$V_{CE} = 2V, I_C = 2mA$	-	80	400	μs
		Fall time	tf	$R_L = 100 \Omega$	-	70	300	μs



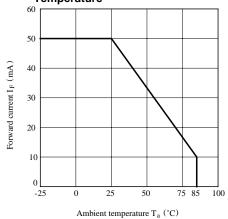
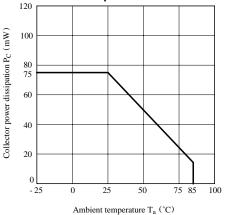


Fig. 2 Collector Power Dissipation vs. Ambient Temperature



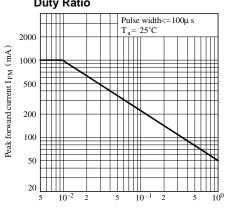


Fig. 3 Peak Forward Current vs. Duty Ratio



Fig. 5 Collector Current vs. Forward Current

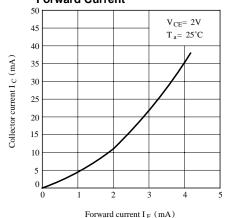


Fig. 7 Collector Current vs. Ambient Temperature

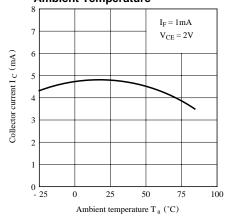
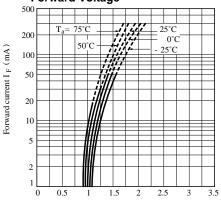
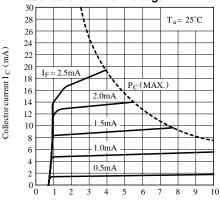


Fig. 4 Forward Current vs. Forward Voltage



Forward Voltage VF (V)

Fig. 6 Collector Current vs. Collector-emitter Voltage



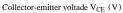


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

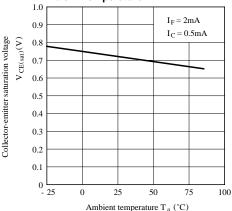
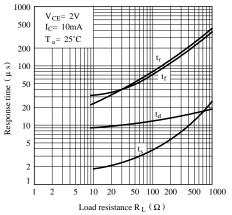
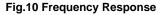
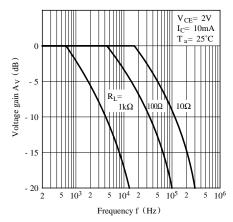


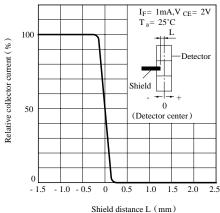
Fig. 9 Response Time vs. Load Resistance











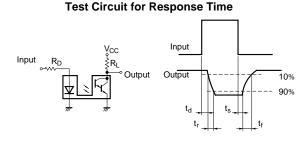


Fig.11 Collector Dark Current vs. Ambient Temperature

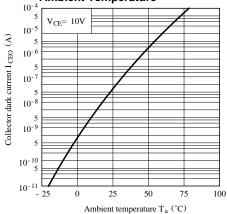
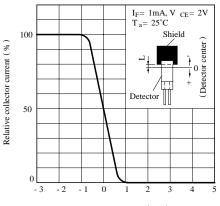


Fig. 13 Relative Collector Current vs. Shield Distance (2)



Shield distance L (mm)

Precautions for Use

- 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".

NOTICE

- •The circuit application examples in this publication are provided to explain representative applications of SHARP devices and are not intended to guarantee any circuit design or license any intellectual property rights. SHARP takes no responsibility for any problems related to any intellectual property right of a third party resulting from the use of SHARP's devices.
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 - Office automation equipment
 - Telecommunication equipment [terminal]
 - Test and measurement equipment
 - Industrial control
 - Audio visual equipment
 - Consumer electronics

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- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

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