GP1S73P/GP1S74P

Compact Photointerrupter with Connector

■ Features

1. Compact type
2. Snap-in mounting type
3. 3 kinds of mounting plate thickness
   (Applicable plate thickness : 1.0, 1.2 and 1.6 mm)

■ Applications

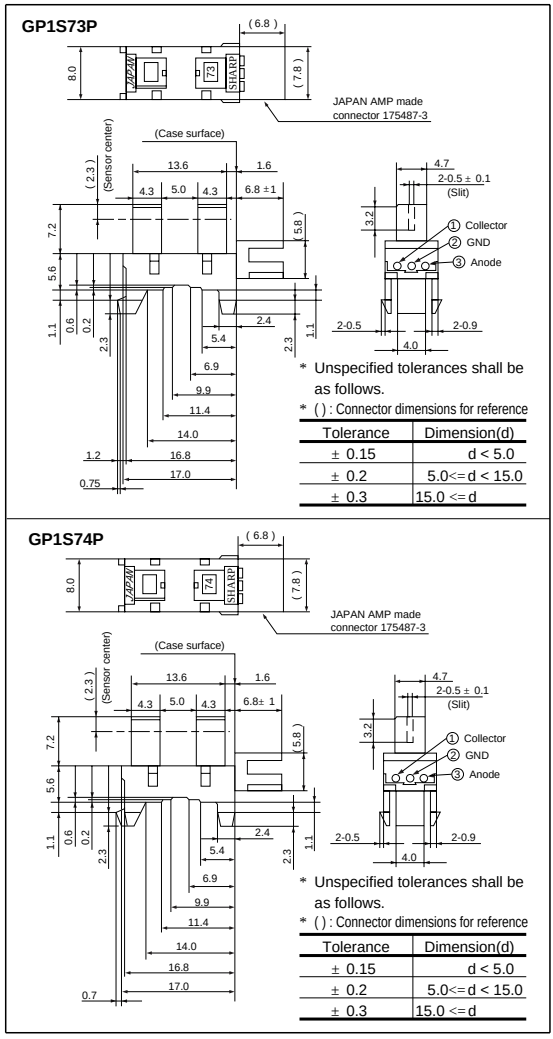
1. Copiers
2. Laser beam printers
3. Facsimiles

■ Absolute Maximum Ratings (Ta=25˚C)

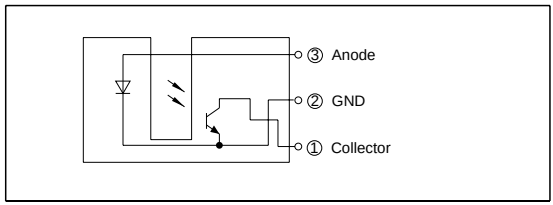
	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1 Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	20	mA
	Collector power dissipation	P_C	75	mW
	Operating temperature	T_{opr}	- 25 to + 85	˚C
	Storage temperature	T_{stg}	- 40 to + 85	˚C

*1 Pulse width 100μ s, Duty ratio=0.01
*2 The connector should be plugged in/out at normal temperature.

■ Outline Dimensions (Unit : mm)



■ Internal Connection Diagram (Both GP1S73P/GP1S74P)



■ Electro-optical Characteristics

(Ta=25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA	-	1.2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} =0.5A	-	3.0	4.0	V
	Reverse current		I_R	V_R = 3V	-	-	10	μA
Output	Dark current		I_{CEO}	V_{CE} = 20V	-	1	100	nA
Transfer characteristics	Collector current		I_C	V_{CE} = 5V, I_F = 20mA	0.5	-	15	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 40mA, I_C = 0.5mA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA	-	3	15	μs
		Fall time	t_f	R_L = 100Ω	-	4	20	μs

Fig. 1 Forward Current vs. Ambient Temperature

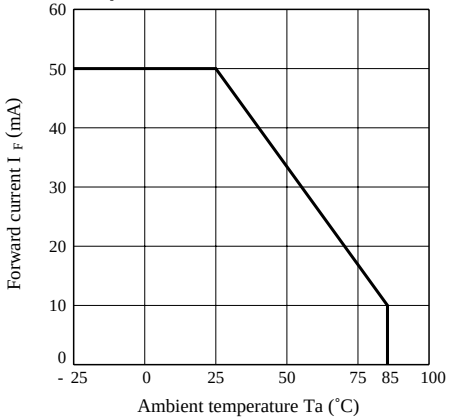


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

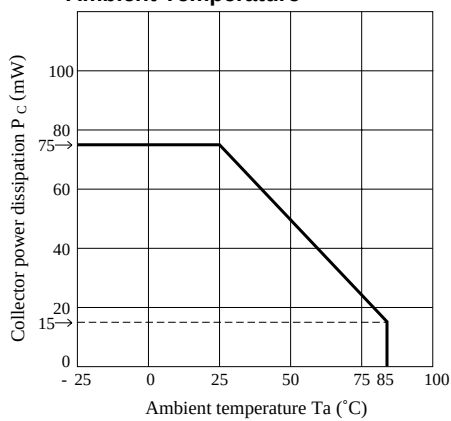


Fig. 3 Peak Forward Current vs. Duty Ratio

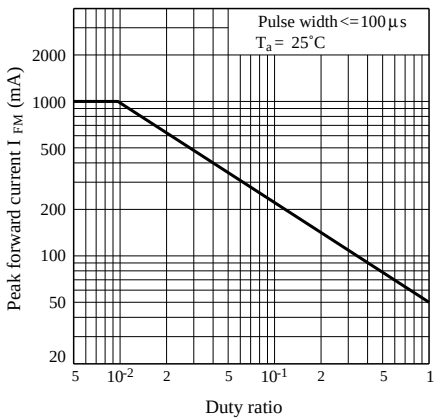


Fig. 4 Forward Current vs. Forward Voltage

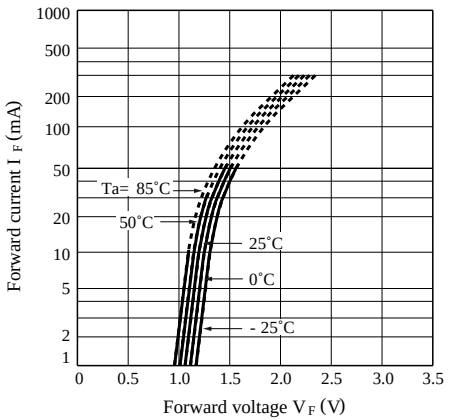


Fig. 5 Collector Current vs. Forward Current

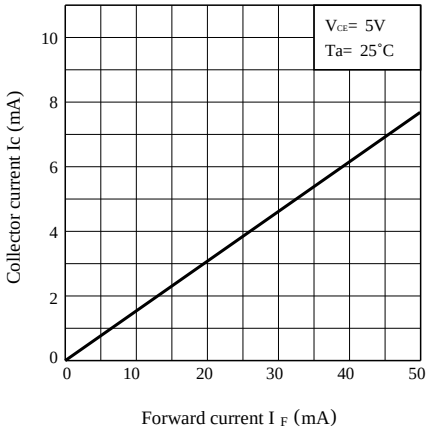


Fig. 6 Collector Current vs. Collector-emitter Voltage

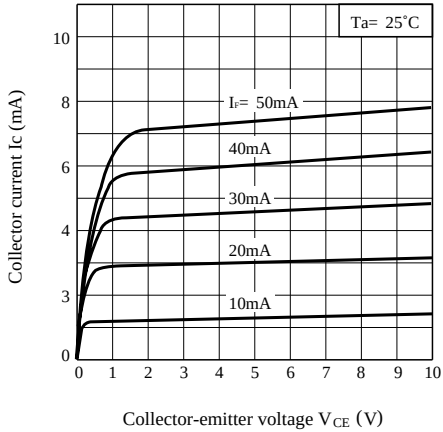


Fig. 7 Collector Current vs. Ambient temperature

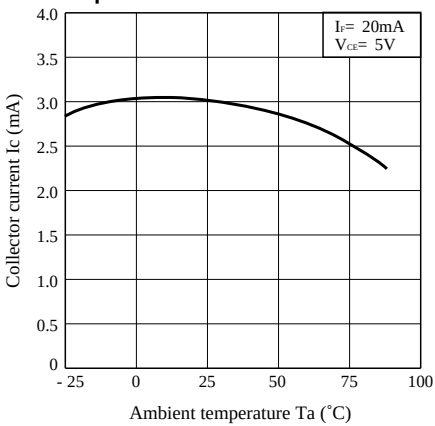


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

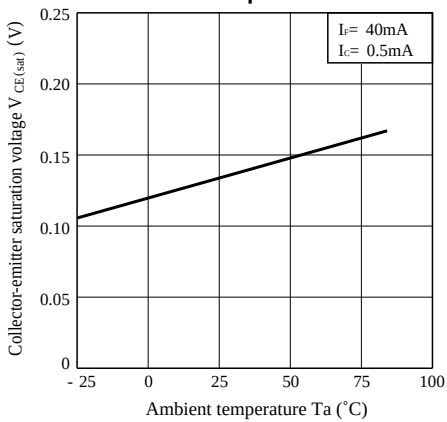
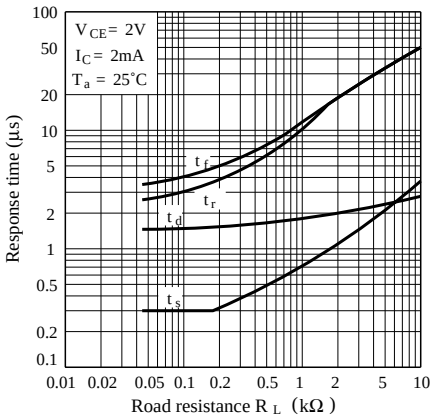


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

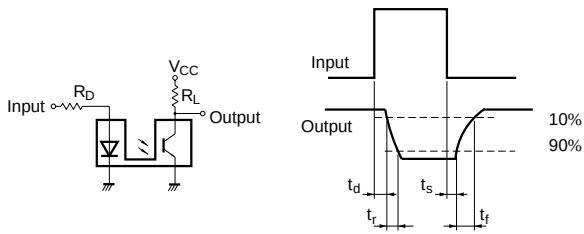


Fig. 10 Frequency Characteristics

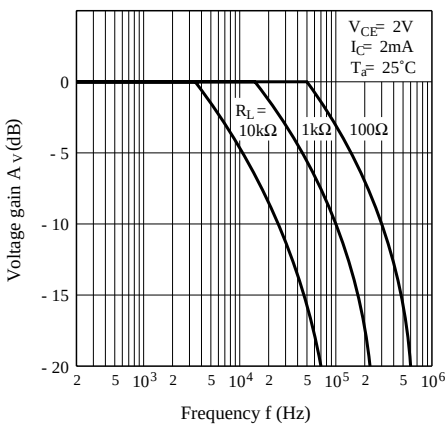


Fig. 11 Dark Current vs. Ambient Temperature

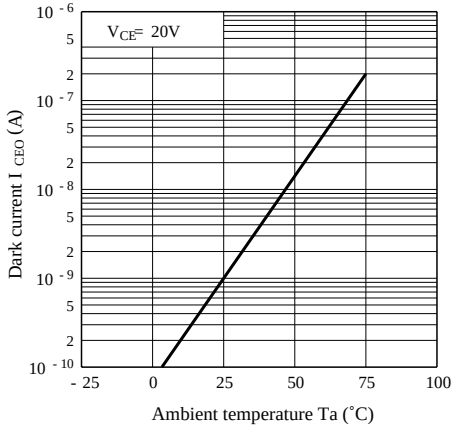


Fig. 12 Detecting Position Characteristics (1)

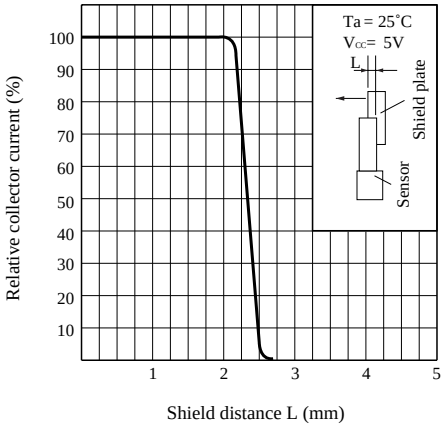
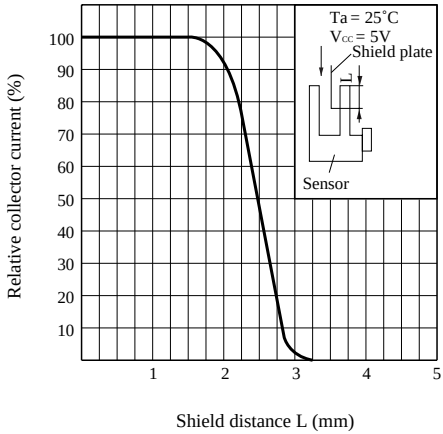


Fig. 13 Detecting Position Characteristics (2)



■ **Recommended Mounting Hole Drawing**(Dimensions shown are recommended values.
Use the photointerrupters after checking the mounting strength and others on an actual machine.)

1. It is recommended to mount the photointerrupters on the shear droop surface (punch side) of the mounting plate (metal plate).
2. Mounting workability, shaking after mounting and mounting strength depend on the corner radius of the mounting plate and state of punching. Determine the mounting hole dimensions after check on an actual machine.
3. General dimensional tolerances shall be ± 0.1 mm.

(Unit : mm)

General mounting type

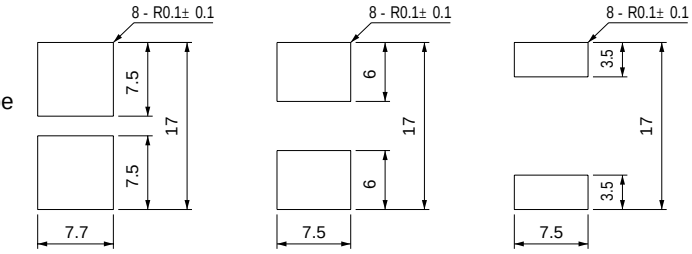


Plate thickness : 1.6 mm　Plate thickness : 1.2 mm　Plate thickness : 1.0 mm

Reverse insertion preventive type

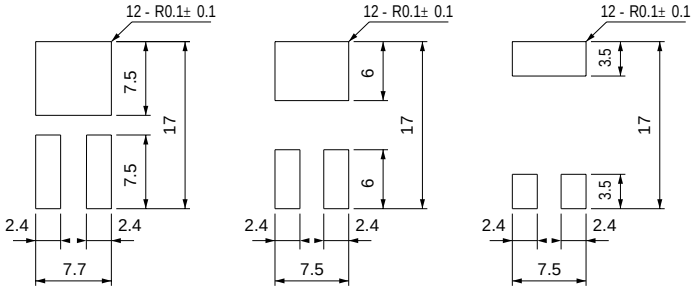


Plate thickness : 1.6 mm　Plate thickness : 1.2 mm　Plate thickness : 1.0 mm

(Precautions for Operation)

1) In this product, the PWB is fixed with a hook, and cleaning solvent may remain inside the case; therefore, dip cleaning or ultrasonic cleaning are prohibited.
2) Remove dust or stains, using an air blower or a soft cloth moistened in cleaning solvent.
However, do not perform the above cleaning using a soft cloth with solvent in the marking portion.
In this case, use only the following type of cleaning solvent for wiping off;
Ethyl alcohol, Methyl alcohol, Isopropyl alcohol
When the cleaning solvents except for specified materials are used, please contact us.

● As for other general precautions, please refer to the chapter "Precautions for Use".