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GP1A73A/GP1A73A1

Compact OPIC Photointerrupter with Connector

■ Features

1. Compact type
2. TTL compatible owing to OPIC output
3. Snap-in mounting type
4. 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

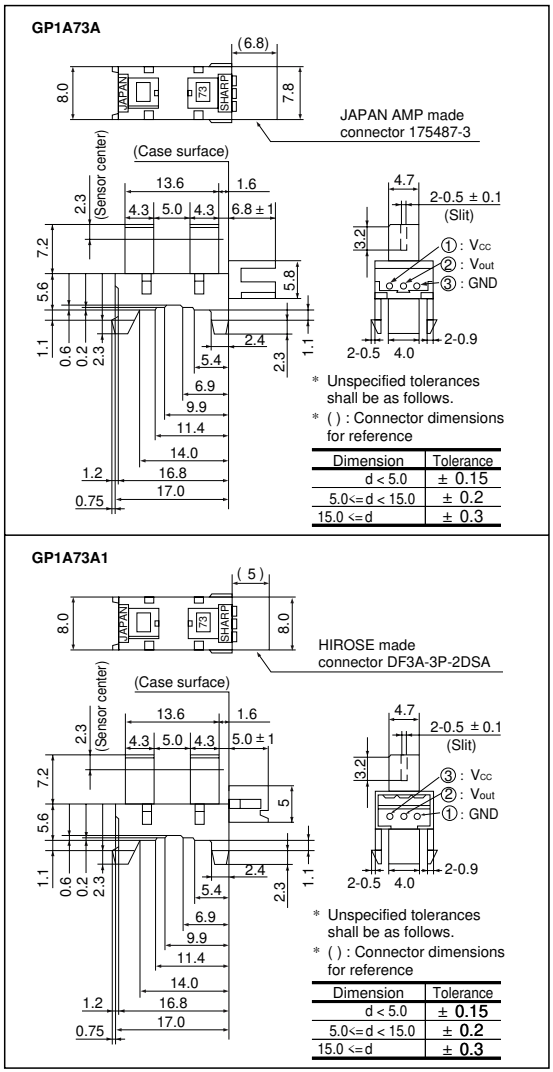
* "OPIC" (Optical IC) is a trademark of the SHARP Corporation.
An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.

■ Absolute Maximum Ratings (Ta=25˚C)

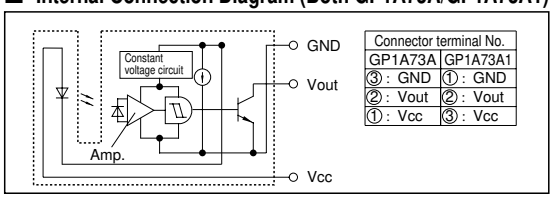
Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	- 0.5 to + 7	V
*1 Output voltage	V_{out}	- 0.5 to + 7	V
*2 Low level output current	I_{OL}	8	mA
*3 Operating temperature	T_{opr}	- 20 to + 75	˚C
*3 Storage temperature	T_{stg}	- 30 to + 85	˚C

*1 Output transistor collector-emitter voltage
*2 Output transistor collector current
*3 The connector should be plugged in/out at normal temperature.

■ Outline Dimensions (Unit : mm)



■ Internal Connection Diagram (Both GP1A73A/GP1A73A1)



* **GP1A73A** and **GP1A73A1** are different in the terminal marking number of connectors from each other due to use of connectors of different manufacturers.

■ Electro-optical Characteristics

(V_{CC} =5v, Ta=25 °C unless otherwise specified)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage		V_{CC}	-	4.5	-	5.5	V
Current consumption		I_{CCL}	Light beam uninterrupted	-	-	16.5	mA
Low level output voltage		V_{OL}	Light beam uninterrupted, I_{OL}=4mA	-	-	0.35	V
Current consumption		I_{CCH}	Light beam interrupted	-	-	16.5	mA
High level output voltage		V_{OH}	Light beam interrupted, R_L=47k Ω	V_{CC} x 0.9	-	-	V
Response characteristics	MIN. interruption time	t_H	R_L= 4.7kΩ	166	-	-	μs
	MIN. sensing time	t_L		166	-	-	μs

Fig. 1 Output Current vs. Ambient Temperature

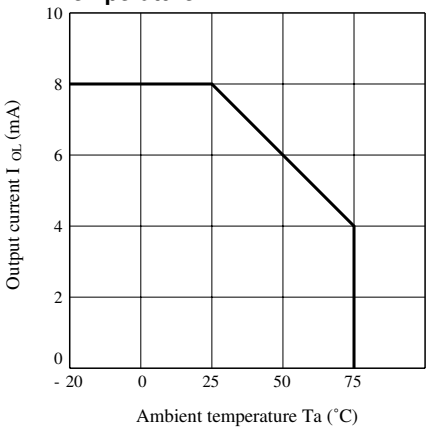


Fig. 2 Low Level Output Voltage vs. Low Level Output Current

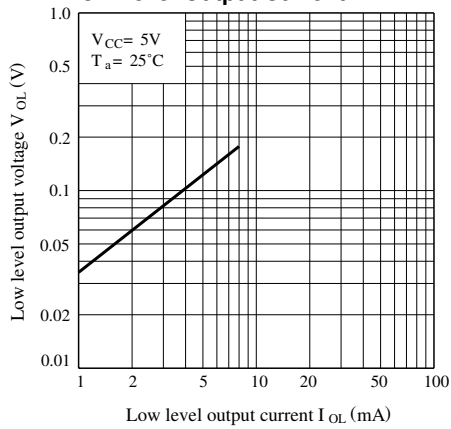


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

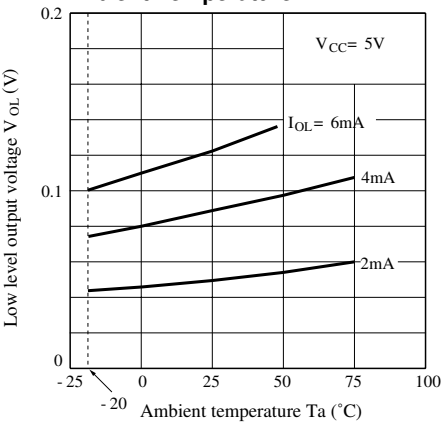


Fig. 4 Supply Current vs. Supply Voltage

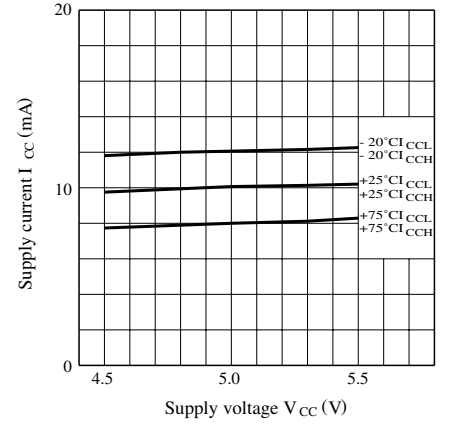


Fig. 5 Detecting Position Characteristics (1)

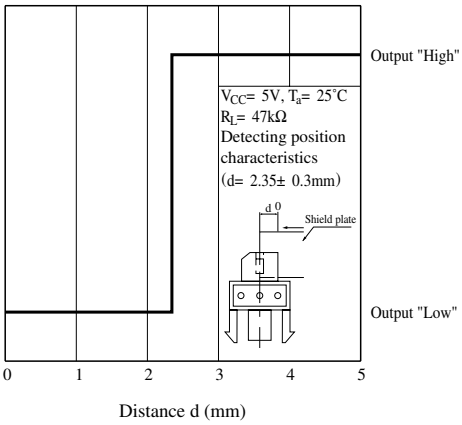
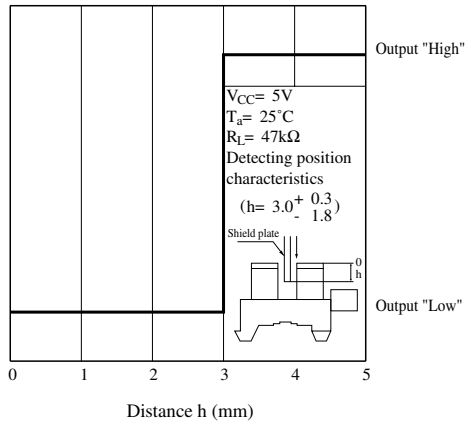


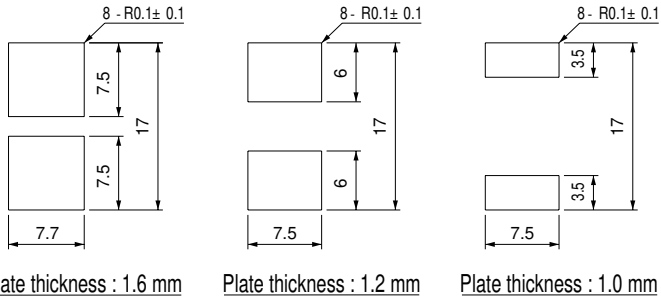
Fig. 6 Detecting Position Characteristics (2)



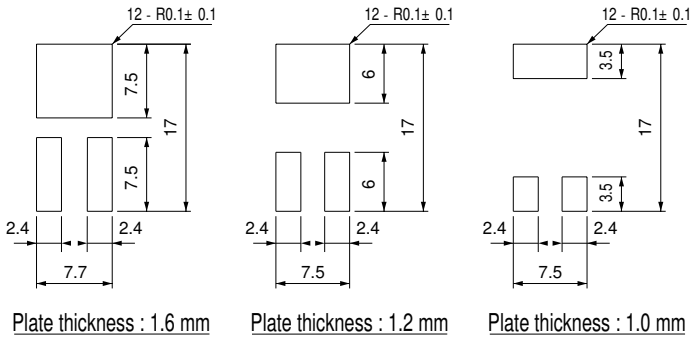
■ Recommended Mounting Hole Shape

(Unit : mm)

General mounting type



Reverse insertion preventive type



1. It is recommended to mark the shear droop surface (punch side) of the mounting plate (metal plate) with "**GP1A73A**" or "**GP1A73A1**".
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 dimensions after check on an actual machine.
3. General dimensional tolerances shall be ±0.1 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.
3) In order to stabilize power supply line, connect a by-pass capacitor of more than 0.01μF between V_{CC} and GND near the device.

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

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(i) The devices in this publication are designed for use in general electronic equipment designs such as:
- Personal computers
- Office automation equipment
- Telecommunication equipment [terminal]
- Test and measurement equipment
- Industrial control
- Audio visual equipment
- Consumer electronics

(ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
- Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

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- Space applications
- Telecommunication equipment [trunk lines]
- Nuclear power control equipment
- Medical and other life support equipment (e.g., scuba).

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- Contact and consult with a SHARP representative if there are any questions about the contents of this publication.