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# GP1A74A/GP1A74A1

## 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 <sub>CC</sub>	- 0.5 to + 7	V
*1 Output voltage	V <sub>out</sub>	- 0.5 to + 7	V
*2 Low level output current	I <sub>OL</sub>	8	mA
*3 Operating temperature	T <sub>opr</sub>	- 20 to + 75	°C
*3 Storage temperature	T <sub>stg</sub>	- 30 to + 85	°C

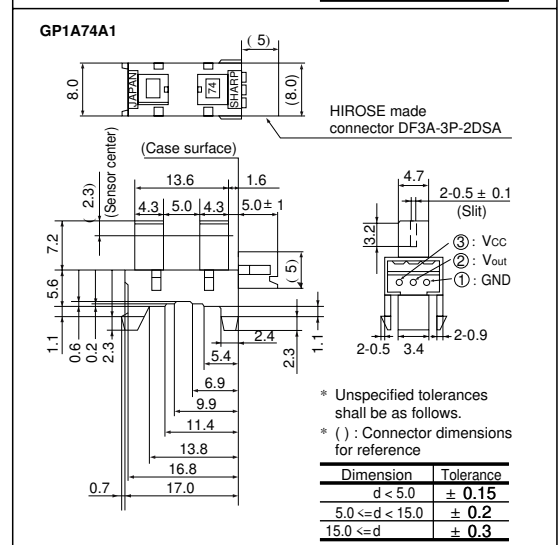
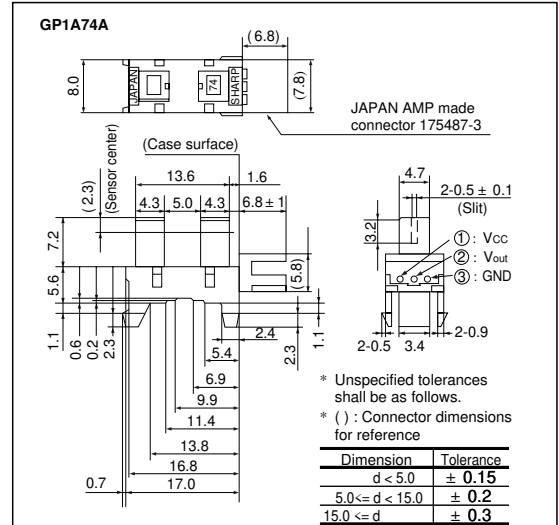
\*1 Output transistor collector-emitter voltage

\*2 Output transistor collector current

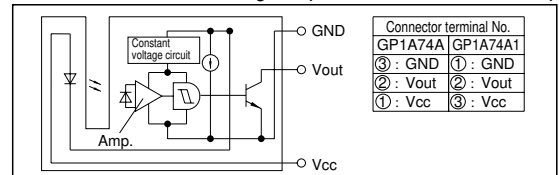
\*3 The connector should be plugged in/out at normal temperature.

### ■ Outline Dimensions

(Unit : mm)



### ■ Internal Connection Diagram (Both GP1A74A/GP1A74A1)



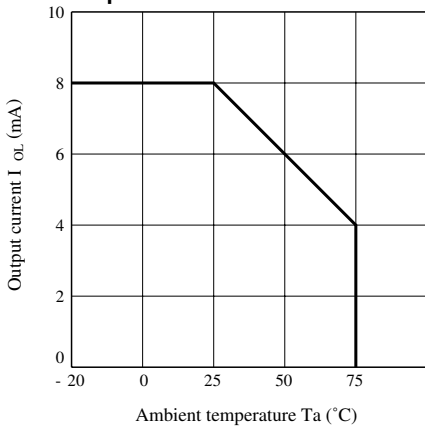
\* GP1A74A and GP1A74A1 are different in the terminal marking number of connectors from each other due to use of connectors of different manufacturers.

**Electro-optical Characteristics**

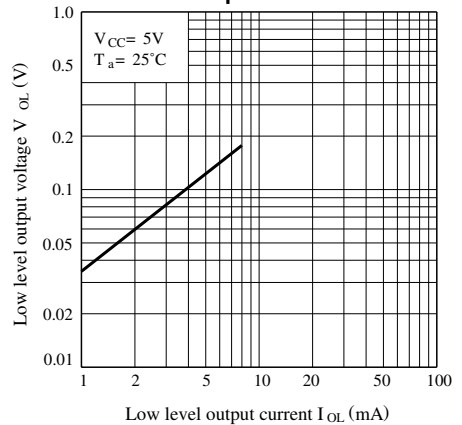
(V<sub>CC</sub>=5v, T<sub>a</sub>=25 °C unless otherwise specified)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage		V <sub>CC</sub>	-	4.5	-	5.5	V
Current consumption		I <sub>CCL</sub>	Light beam uninterrupted	-	-	16.5	mA
Low level output voltage		V <sub>OL</sub>	Light beam uninterrupted, I <sub>OL</sub> =4mA	-	-	0.35	V
Current consumption		I <sub>CCH</sub>	Light beam interrupted	-	-	16.5	mA
High level output voltage		V <sub>OH</sub>	Light beam interrupted, R <sub>L</sub> =47kΩ	V <sub>CC</sub> x 0.9	-	-	V
Response characteristics	MIN. interruption time	t <sub>H</sub>	R <sub>L</sub> = 4.7kΩ	166	-	-	μs
	MIN. sensing time	t <sub>L</sub>		166	-	-	μs

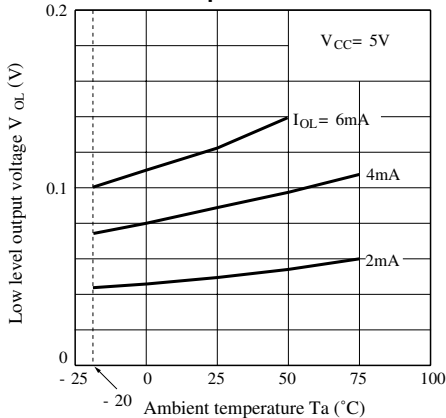
**Fig. 1 Output Current vs. Ambient Temperature**



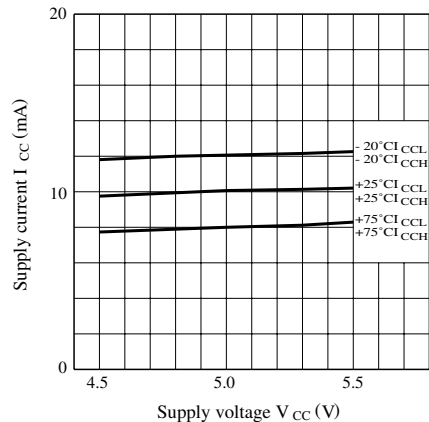
**Fig. 2 Low Level Output Voltage vs. Low Level Output Current**



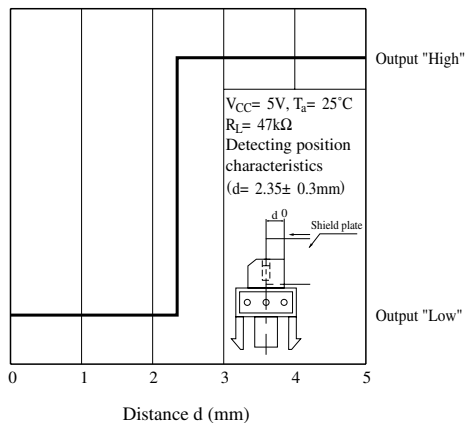
**Fig. 3 Low Level Output Voltage vs. Ambient Temperature**



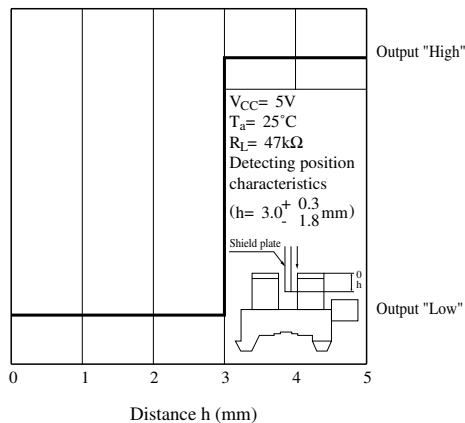
**Fig. 4 Supply Current vs. Supply Voltage**



**Fig. 5 Detecting Position Characteristics (1)**

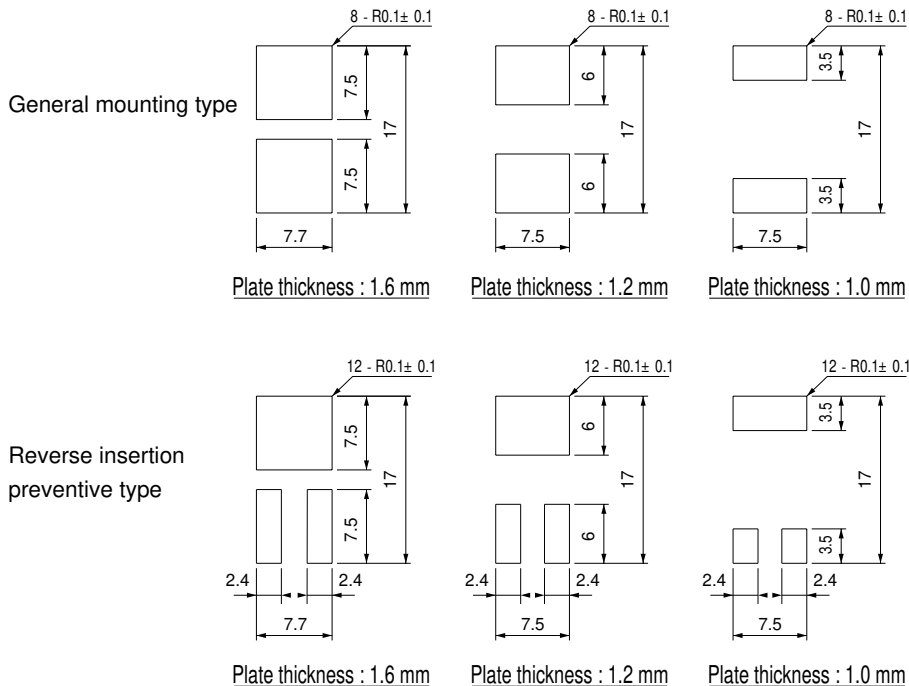


**Fig. 6 Detecting Position Characteristics (2)**



**Recommended Mounting Hole Shape**

(Unit : mm)



1. It is recommended to mark the shear droop surface (punch side) of the mounting plate (metal plate) with "GP1A74A" or "GP1A74A1".
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  $\pm 0.1$  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  $0.01\mu\text{F}$  between  $V_{\text{CC}}$  and GND near the device.
- As for other general precautions, please refer to the chapter "Precautions for Use".

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    - Telecommunication equipment [terminal]
    - Test and measurement equipment
    - Industrial control
    - Audio visual equipment
    - Consumer electronics
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    - Traffic signals
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    - Alarm equipment
    - Various safety devices, etc.
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