

# GP1A71A/GP1A71A1

## Compact Size OPIC Photointerrupter with Connector

### ■ Features

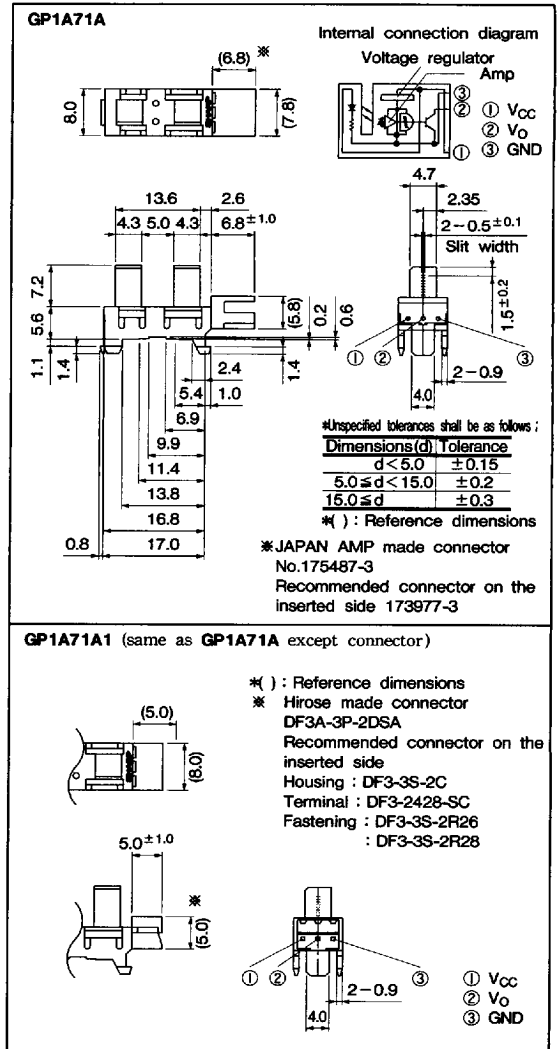
1. Compact type
2. Snap-in mounting type
3. Can be mounted on 3 different thickness boards (1.0mm, 1.2mm, 1.6mm)
4. 3-pin connector terminal

### ■ Applications

1. Copiers
2. Laser beam printers
3. Facsimiles

### ■ Outline Dimensions

(Unit : mm)



\* "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.

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■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.5 to +10	V
*1 Output voltage	V <sub>out</sub>	-0.5 to +28	V
*2 Low level output current	I <sub>OL</sub>	50	mA
*3 Operating temperature	T <sub>opr</sub>	-20 to +75	°C
*3 Storage temperature	T <sub>stg</sub>	-30 to +85	°C

\*1 Collector-emitter voltage of output transistor

\*2 Collector current of output transistor

\*3 The connector should be plugged in/out and the unit's hook should be used at normal temperature.

■ Electro-optical Characteristics (Unless otherwise specified V<sub>CC</sub> = 5V, Ta = 25°C)

Parameter	Symbol	conditions	MIN.	TYP.	MAX.	Unit	
Operating supply voltage	V <sub>CC</sub>		4.5	—	5.5	V	
Low level supply current	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> = 16mA	—	—	0.35	V	
High level supply current	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> × 0.9	—	—	V	
Response characteristics	Minimum interruption time	t <sub>H</sub>	R <sub>L</sub> = 4.7kΩ	166	—	—	μs
	Minimum sensing time	t <sub>L</sub>		166	—	—	μs



Fig. 1 Low Level Output Current vs. Ambient Temperature

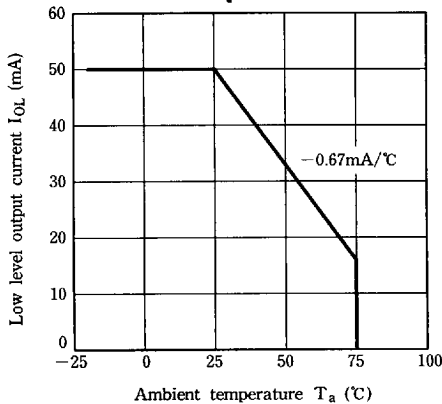
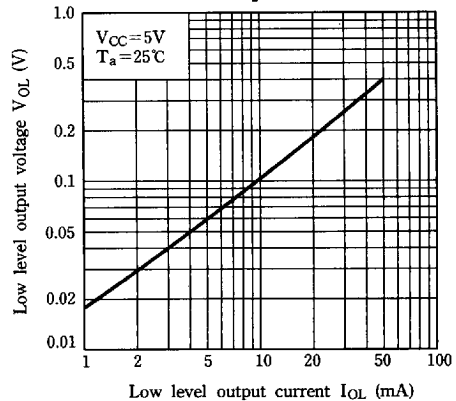
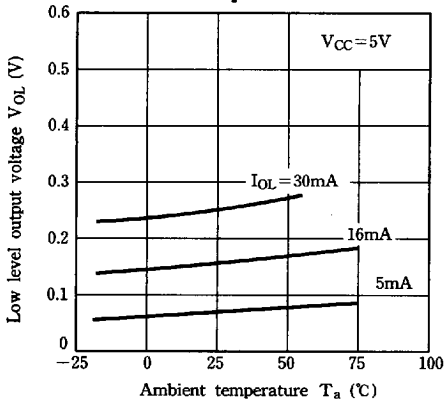


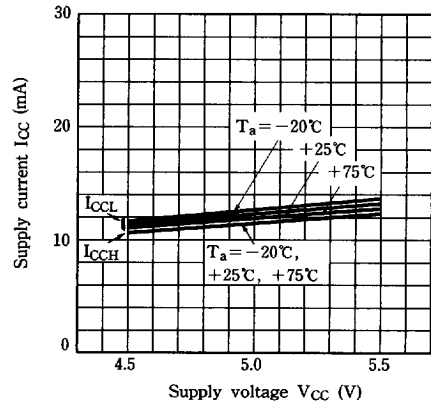
Fig. 2 Low Level Output Voltage vs. Low Level Output Current



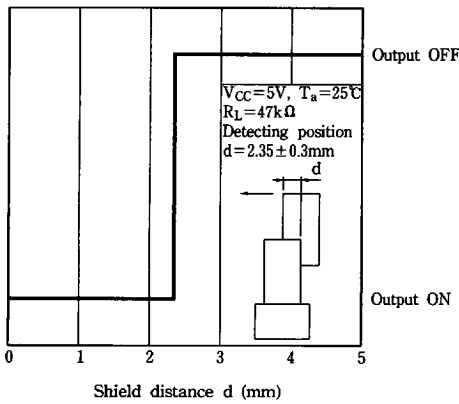
**Fig. 3 Low Level Output Voltage vs. Ambient Temperature**



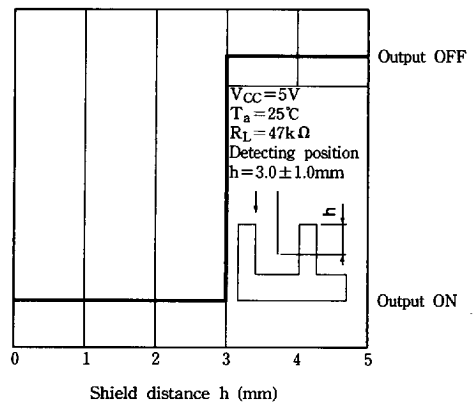
**Fig. 4 Supply Current vs. Supply Voltage**



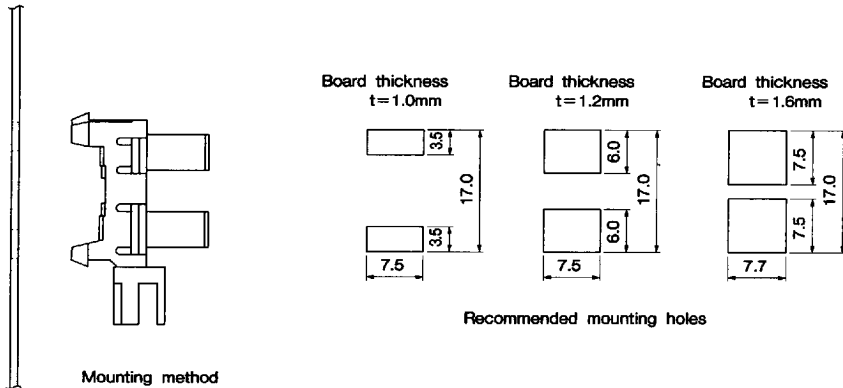
**Fig. 5 Detecting Position Characteristics (1)**



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



**Recommended Mounting Holes (Unit : mm)**



**■ Precautions for Use**

- (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 cleaning 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 consult us.
- (3) In order to stabilize power supply line, connect a by-pass capacitor of more than  $0.01 \mu\text{F}$  between Vcc and GND near the device.
- (4) As for other general cautions, refer to the chapter "Precautions for Use" (Page 78 to 93).