

GPIA05/GPIA22LC/ GP1A23LC/GP1A25LC

OPIC Photointerrupter with Connector

■ Features

1. Uses 3-pin connector terminal
2. High sensing accuracy (Slit width : 0.5mm)
3. Wide gap between light emitter and detector (5mm)

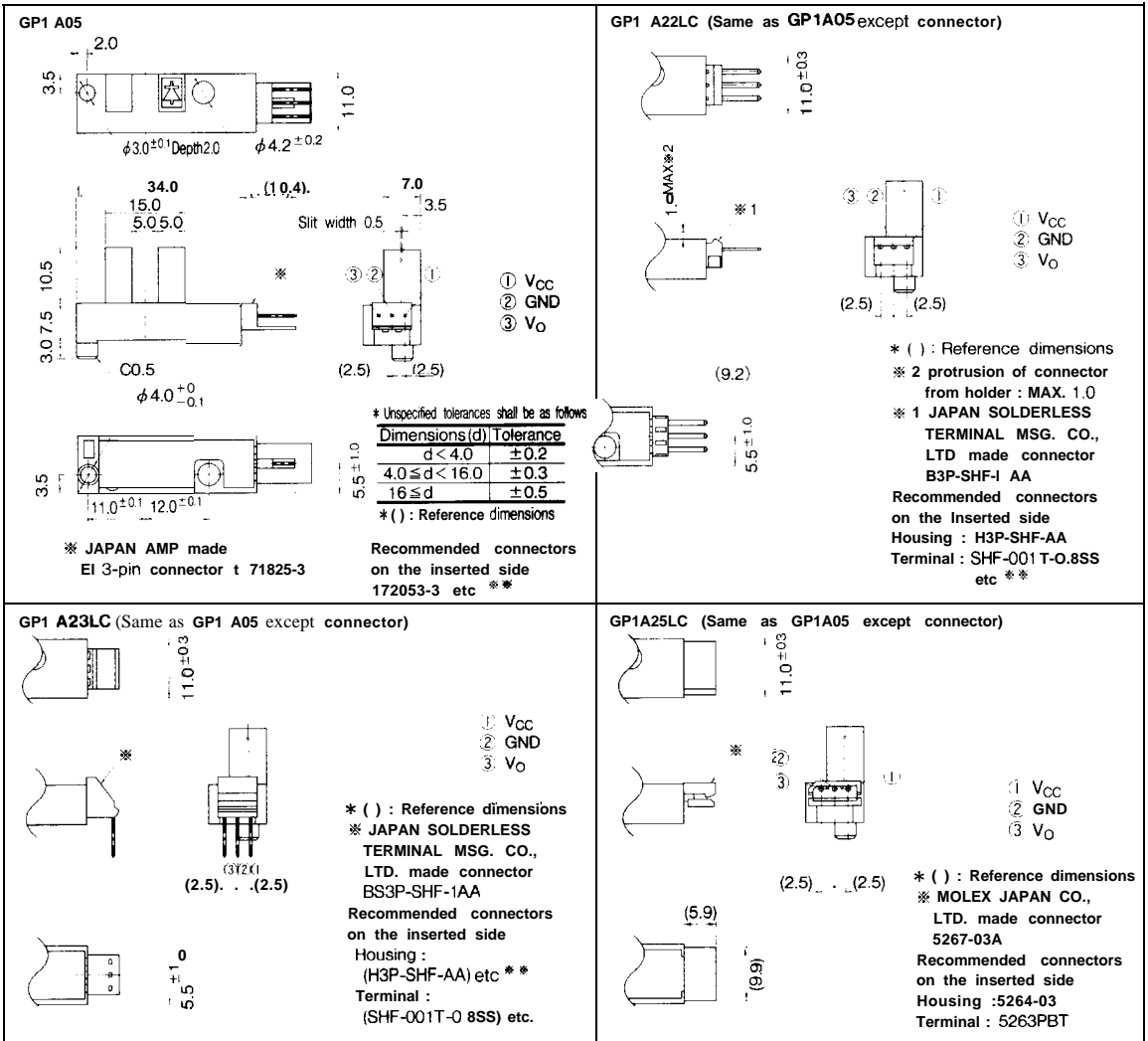
■ Applications

1. Copiers, Printers
2. Facsimiles

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

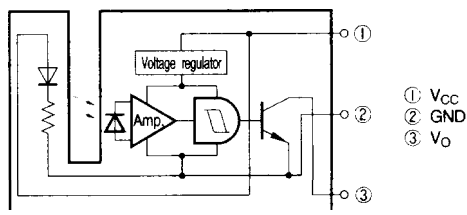
(Unit : mm)

■ Outline Dimensions



** Recommended connectors on the inserted side are shown on the following 3rd page.

Internal connection diagram (Common to 4 models)



Absolute Maximum Ratings

(T_a = 25°C)

| Parameter | Symbol | Rating | Unit |
|-----------------------------|------------------|-----------------------------|-------------|
| supply voltage | V _{CC} | GP1 A05 | -0.5 to +10 |
| | | GPIA22LC/GPIA23LC/GP 1A25LC | -0.5 to +8 |
| *1 Output voltage | V(O) | -0.5 to +28 | V |
| *2 Low level output current | I _{OL} | 50 | mA |
| ** operating temperature | T _{opr} | -20 to +75 | °C |
| *** storage temperature | T _{stg} | GP1A05/GP1A22LC/GP1A23LC | -40 to +85 |
| | | GP1A25LC | -30 to +85 |

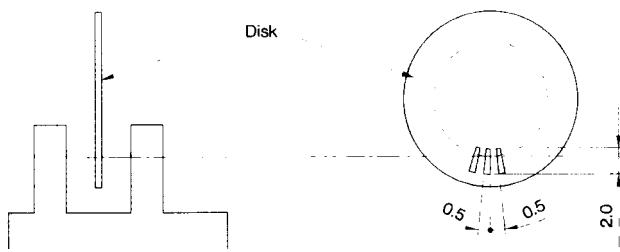
- *1 Collector-emitter voltage of output transistor
- *2 Collector current of output transistor
- *3 The connector should be plugged in/out at normal temperature

Electro-optical Characteristics

(Unless otherwise specified, V_{CC} = 5V, T_a = 25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---------------------------|------------------|--|-----------------------|------|------|------|
| Operating supply voltage | V _{CC} | | 4.5 | - | 5.5 | v |
| Low level supply current | I _{CCL} | Light beam uninterrupted | - | - | 30 | mA |
| Low level output voltage | V _{OL} | Light beam uninterrupted, I _{OL} = 16mA | - | - | 0.35 | v |
| High level supply current | I _{CCH} | Light beam interrupted | - | - | 30 | mA |
| High level output voltage | V _{OH} | Light beam interrupted, R _L = 47kΩ | V _{CC} × 0.9 | - | - | V |
| *5 Response frequency | f | *1 R _L = 47kΩ | - | - | 3000 | Hz |

- *4 No DC output is allowed.
- *5 Response frequency is measured with the disk shown below being rotated. (Unit : mm)



Photointerrupters

Fig. 1 Low Level Output Current vs. Ambient Temperature

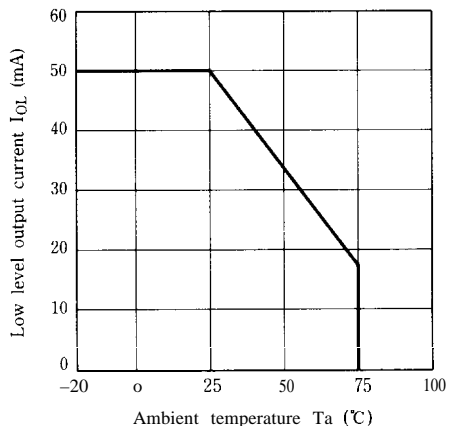


Fig. 2 Low Level Output Voltage vs. Low Level output Current

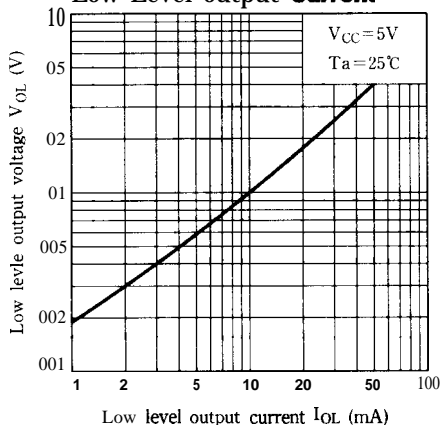


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

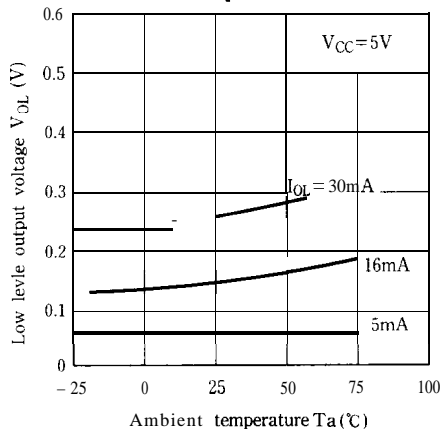


Fig. 4 Supply Current vs. supply voltage

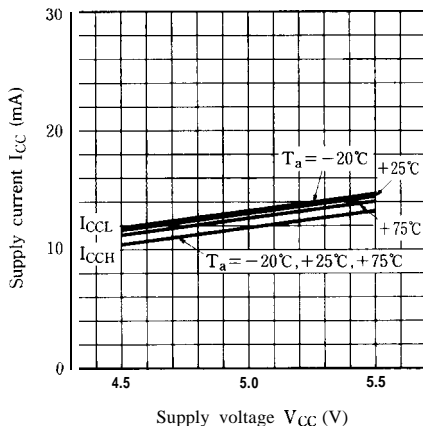


Fig. 5 Detecting Position Characteristics (1)

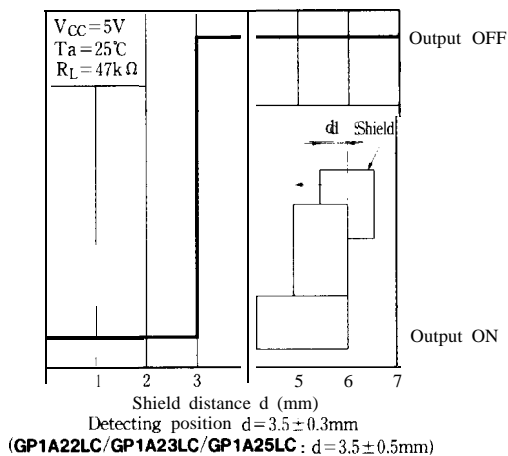
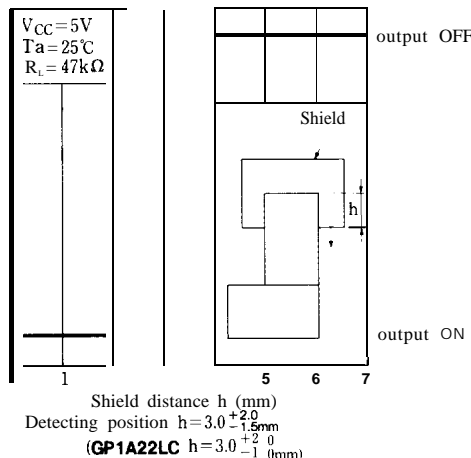


Fig. 6 Detecting Position Characteristics (2)



■ **Recommended** connectors on the Inserted side

Recommended connectors on the inserted side for GP1A05, GP1A22LC, and GP1A23LC are shown below.

《GP1A05》

- JAPAN AMP made EI **series** connectors (standard type)

| Housing color | Natural color | Black | Blue | Green | Red |
|-----------------------------|------------------|------------------|------------------|------------------|-----------|
| Housing Model No. | 171822-3 | 2171827-3 | 4-171822-3 | 6-171822-3 | 8171822-3 |
| Special terminal Model. No. | AWG size | Product shape | Material | Model No. | |
| | | | | AWG 26 to 20 | Bulk |
| | Copper phosphide | 170204-2 | | | |
| | Chain | Brass | 170262-1 | | |
| | | | Copper phosphide | 170262-2 | |
| | | AWG 30 to 26 | Bulk | Brass | 170205-1 |
| | | | | Copper phosphide | 170205-2 |
| | Chain | Brass | 170263-1 | | |
| | | Copper phosphide | 170263-2 | | |

- JAPAN AMP made EI series connectors (low profile type)

| Housing color | Natural color | Black | Blue | Green | Red |
|--|-------------------|---------------|------------|------------|------------|
| Housing Model No. | 172142-3 | 2-172142-3 | 4-172142-3 | 6-172142-3 | 8-172142-3 |
| Special terminal Model. No. (Material: Copper phosphide) | AWG size 26 to 22 | Product shape | Model No. | | |
| | | | Bulk | 170369-1 | |
| | AWG 30 to 26 | Chain | 170354-1 | | |
| | | | Bulk | 170370-1 | |
| Chain | 170355-1 | | | | |

- JAPAN AMP made EI **series** connectors (amp mass terminating)

| Housing-terminal united type connector | AWG28 (Green) | AWG26 (Natural color) | AWG24 (Black) | AWG22 (Red) |
|--|---------------|-----------------------|---------------|-------------|
| | 172054-3 | 172053-3 | 172052-3 | 172051-3 |

* Terminal Material Copper phosphide

《GP1A22LC/GP1A23LC》

- JAPAN **SOLDERLESS TERMINAL** MSG. CO, **LTD.** made (Natural color · bulk)

| Housing Model No. | H3P-SHF-AA | | | S3P-SHF-1 | | |
|-----------------------------|-------------------|------------------|----------------|-------------------|--------------|-----------|
| Special terminal Model. No. | AWG size 26 to 22 | Material | Model No. | AWG size 27 to 22 | Material | Model No. |
| | | | | | | |
| | AWG 30 to 26 | Copper phosphide | SHF-001T-0.8BS | | | |
| | | | Brass | SHF-002T-0.8SS | AWG 30 to 28 | Material |
| | | Copper phosphide | SHF-001T-0.8BS | Brass | | |
| | | Copper phosphide | | | | |

■ **Precautions** for Use

- (1) It is recommended that a by-pass capacitor of more than 0.01 μ F be added between V_{CC} and GND near the device in order to stabilize power supply line.
- (2) In this product, the PWB is fixed with a rear cover, and cleaning solvent may remain inside the case ; therefore, dip cleaning or ultrasonic cleaning is prohibited.
- (3) 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 used for wiping off :

Ethyl alcohol, Methyl alcohol, Isopropyl alcohol,

When the cleaning solvents except for specified materials are used, please consult us.

- (4) As for other general cautions, refer to the chapter “Precautions for Use.” (Page 78 to 93)

