

# GP1A05HR/GP1A22HR

**OPIC Photointerrupter  
with Connector**

## ■ Features

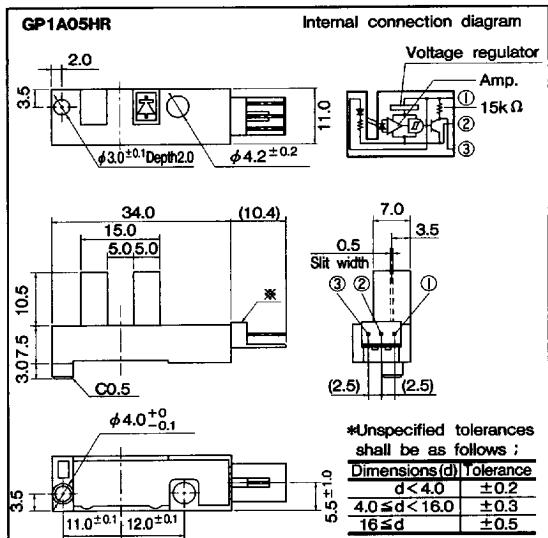
1. 3-pin connector-terminal
2. High sensing accuracy (Slit width : 0.5mm)
3. Wide gap between light emitter and detector (5mm)

## ■ Applications

1. Copiers
2. Printers
3. Facsimiles

## ■ Outline Dimensions

(Unit : mm)



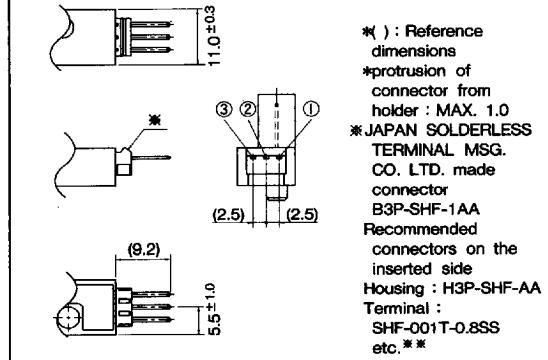
\*Unspecified tolerances shall be as follows :

Dimensions(d)	Tolerance
$d < 4.0$	$\pm 0.2$
$4.0 \leq d < 16.0$	$\pm 0.3$
$16 \leq d$	$\pm 0.5$

(\* ) : Reference dimensions

① V<sub>cc</sub> \*JAPAN AMP made EI 3-pin connector 171825-3  
 ② GND Recommended connectors on the inserted side  
 ③ V<sub>o</sub> 172053-3 etc. \*\*

## GP1A22HR (Same as GP1A05HR except connector)



(\* ) : Reference dimensions  
 \*protrusion of connector from holder : MAX. 1.0  
 \*JAPAN SOLDERLESS TERMINAL MSG. CO. LTD. made connector B3P-SHF-1AA  
 Recommended connectors on the inserted side  
 Housing : H3P-SHF-AA  
 Terminal : SHF-001T-0.8SS etc. \*\*

\* "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.  
 \*\* Recommended connectors on the inserted side are shown on the page after next.

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In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device.

## ■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.5 to 8	V
*1 Low level output current	I <sub>OL</sub>	50	mA
*2 Operating temperature	T <sub>opr</sub>	-20 to +75	°C
*2 Storage temperature	T <sub>stg</sub>	-40 to +85	°C

\*1 Collector current of output transistor

\*2 The connector should be plugged in/out at normal temperature.

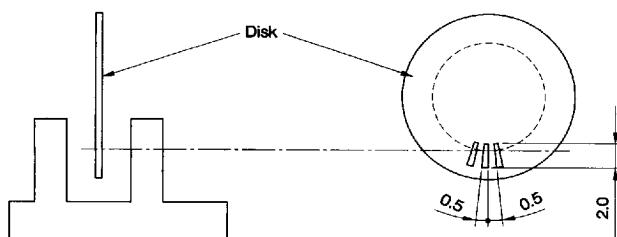
## ■ Electro-optical Characteristics

(V<sub>CC</sub>=5V, Ta=25°C)

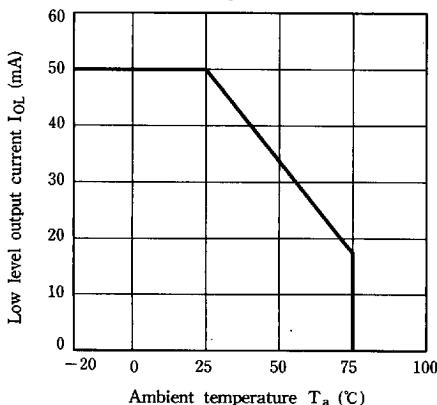
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage	V <sub>CC</sub>		4.5	—	5.5	V
Low level supply current	I <sub>CCL</sub>	Light beam interrupted	—	—	30	mA
Low level output voltage	V <sub>OL</sub>	Light beam interrupted, I <sub>OL</sub> =16mA	—	—	0.4	V
High level supply current	I <sub>CCH</sub>	Light beam uninterrupted	—	—	30	mA
High level output voltage	V <sub>OH</sub>	Light beam uninterrupted	V <sub>CC</sub> ×0.9	—	—	V
*4 Response Frequency	f	*3	—	—	3 000	Hz

\*3 NO DC output is allowed.

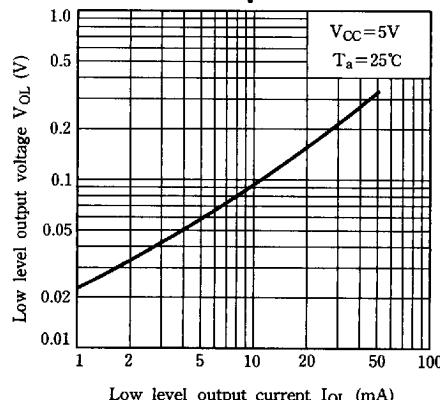
\*4 Response frequency is measured with the disk shown below being rotated. (Unit : mm)



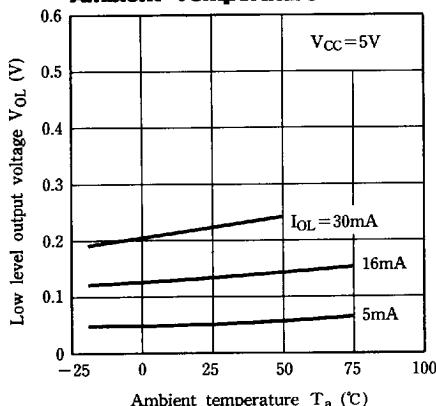
**Fig.1 Low Level Output Current vs. Ambient Temperature**



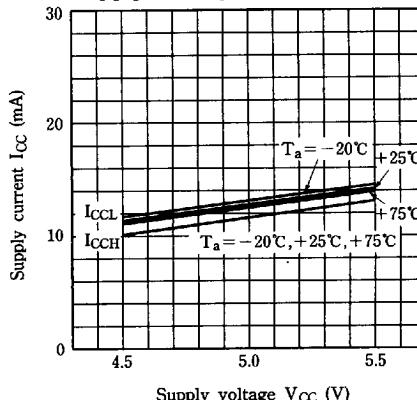
**Fig.2 Low Level Output Voltage vs. Low Level Output Current**



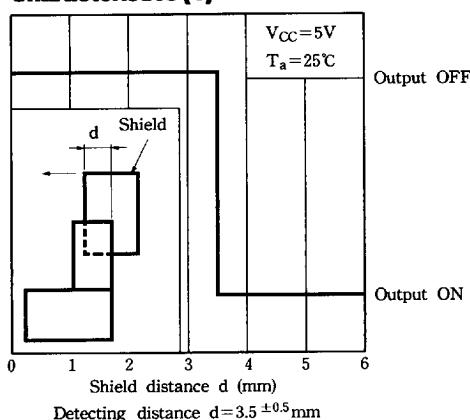
**Fig. 3 Low Level Output Voltage vs. Ambient Temperature**



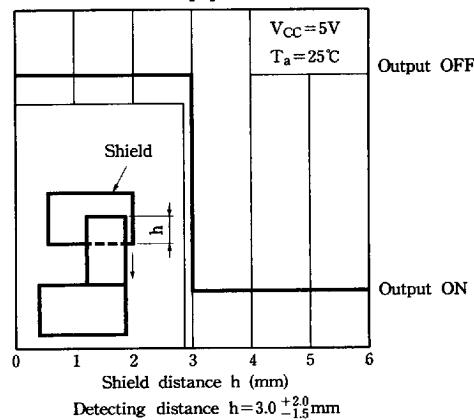
**Fig. 4 Supply Current vs. Supply Voltage**



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



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



### ■ Recommended Connectors on the Inserted Side

Recommended connector for GP1A05HR is same as GP1A05's.

Recommended connector for GP1A22HR is same as GP1A23LC's.  
(Refer to page 667.)

### ■ Precautions for Use

- (1) It is recommended that a by-pass capacitor of more than  $0.01 \mu F$  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 resin 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 specific materials are used, please consult us.

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