

# GP1A05/GP1A22LC/ 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)

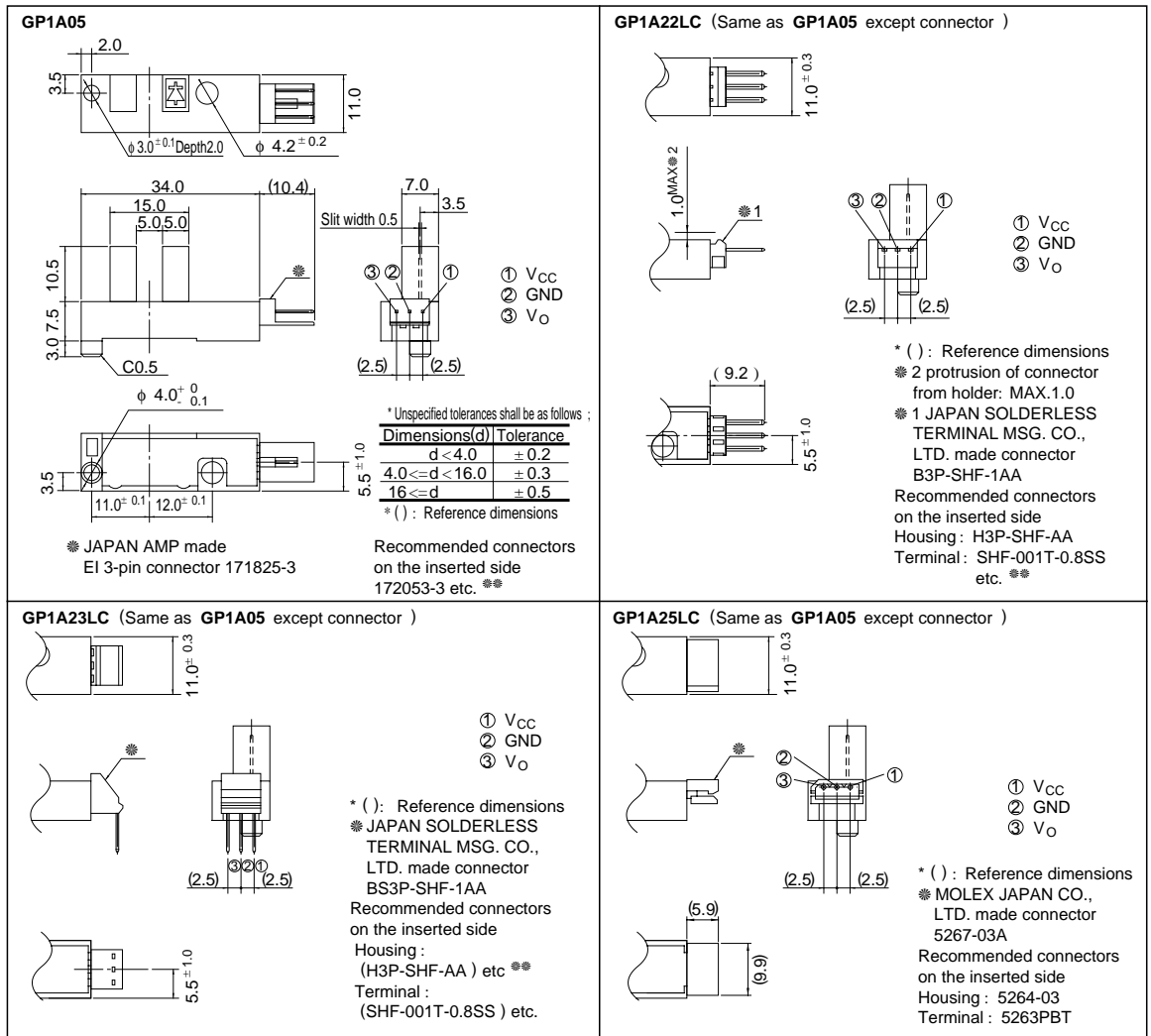
### ■ Applications

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.

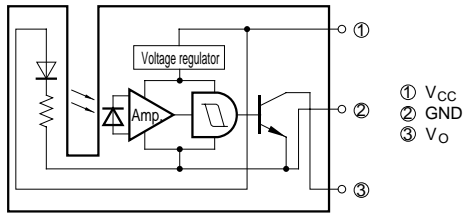
(Unit : mm)

### ■ Outline Dimensions



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

Internal connection diagram ( Common to 4 models )



## Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Supply voltage	GP1A05	V <sub>CC</sub>	- 0.5 to + 10	V
	GP1A22LC/GP1A23LC/GP1A25LC		- 0.5 to + 8	
*1 Output voltage		V <sub>O</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	GP1A05/GP1A22LC/GP1A23LC	T <sub>stg</sub>	- 40 to + 85	°C
	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.

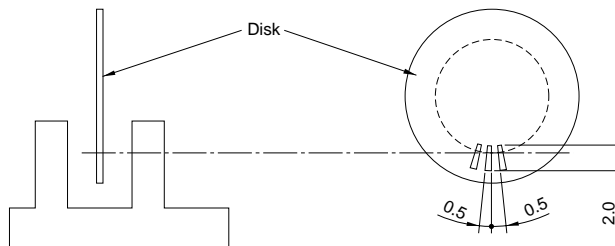
## Electro-optical Characteristics

(Unless otherwise specified, V<sub>CC</sub> = 5V, Ta = 25°C)

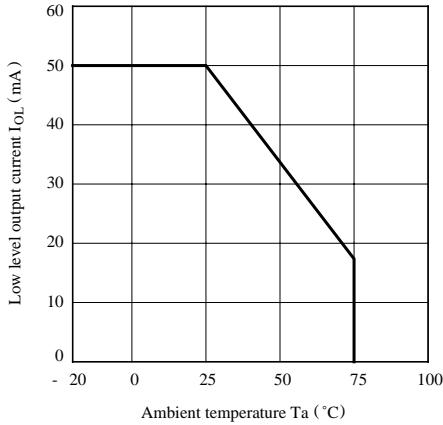
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage	V <sub>CC</sub>		4.5	-	5.5	V
Low level supply current	I <sub>CCL</sub>	Light beam uninterrupted	-	-	30	mA
Low level output voltage	V <sub>OL</sub>	Light beam uninterrupted, I <sub>OL</sub> = 16mA	-	-	0.35	V
High level supply current	I <sub>CCH</sub>	Light beam interrupted	-	-	30	mA
High level output voltage	V <sub>OH</sub>	Light beam interrupted, R <sub>L</sub> = 47k Ω	V <sub>CC</sub> × 0.9	-	-	V
*5 Response frequency	f	*4 R <sub>L</sub> = 47k Ω	-	-	3 000	Hz

\*4 No DC output is allowed.

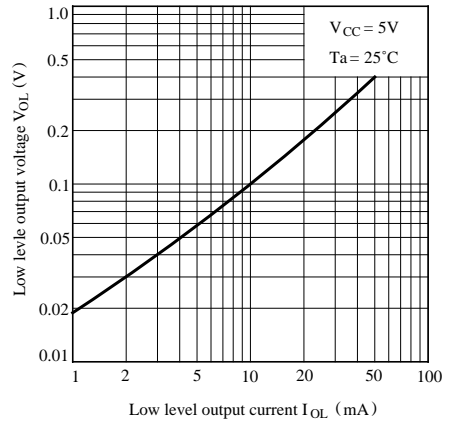
\*5 Response frequency is measured with the disk shown below being rotated. (Unit : mm)



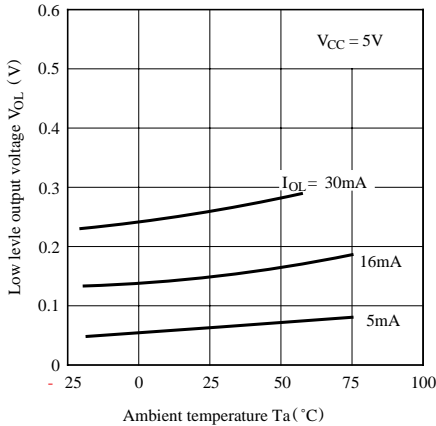
**Fig. 1 Low Level Output Current vs. Ambient Temperature**



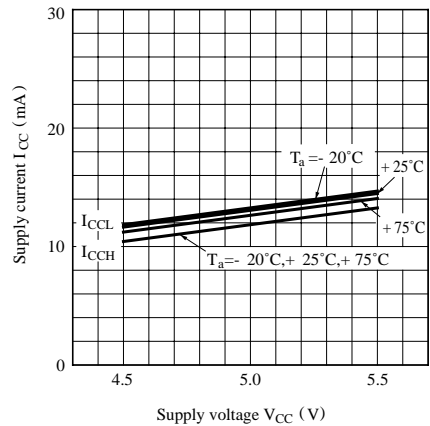
**Fig. 2 Low Level Output Voltage vs. Low Level Output Current**



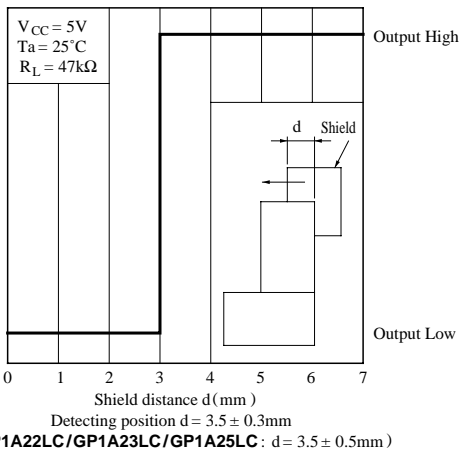
**Fig. 3 Low Level Output Voltage vs. Ambient Temperature**



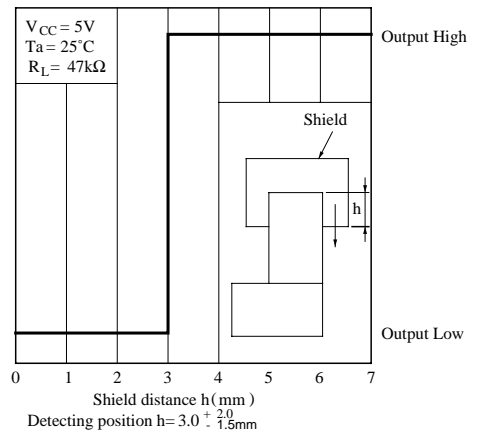
**Fig. 4 Supply Current vs. supply Voltage**



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



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



## ■ Recommended Connectors on the Inserted Side

Recommended 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	2-171822-3	4-171822-3	6-171822-3	8-171822-3
Special terminal Model. No.	AWG size	Product shape	Material	Model No.	
				Bulk	Brass
	Copper phosphide	170204-2			
	Brass	170262-1			
	Chain	Copper phosphide	170262-2		
		Bulk	Brass	170205-1	
			Copper phosphide	170205-2	
	AWG 30 to 26	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	Product shape	Model No.		
			Bulk	170369-1	
	Chain	170354-1			
		Bulk	170370-1		
	Chain		170355-1		

### ● JAPAN AMP made EI series connectors (amp mass termination)

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		
	AWG size	Material	Model No.	AWG size	Material	Model No.
Special terminal Model. No.	AWG 26 to 22	Brass	SHF-001T-0.8SS	AWG 27 to 22	Brass	SHF-001T-0.8P
		Copper phosphide	SHF-001T-0.8BS		Copper phosphide	-
	AWG 30 to 26	Brass	SHF-002T-0.8SS	AWG 30 to 28	Brass	SHF-002T-0.8P
		Copper phosphide	SHF-001T-0.8BS		Copper phosphide	-

## ■ 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 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".

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Datasheets for electronics components.