GP1A05/GP1A22LC/ GP1A23LC/GP1A25LC

OPIC Photointerrupter with Connector

勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

■ 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

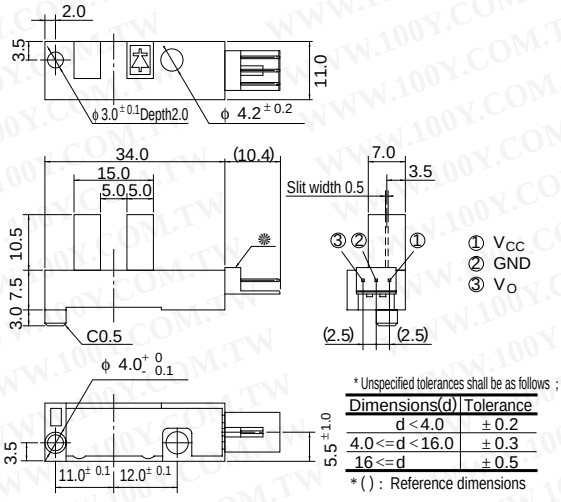
1. Copiers, Printers
2. Facsimiles

* " 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.

■ Outline Dimensions

(Unit : mm)

GP1A05



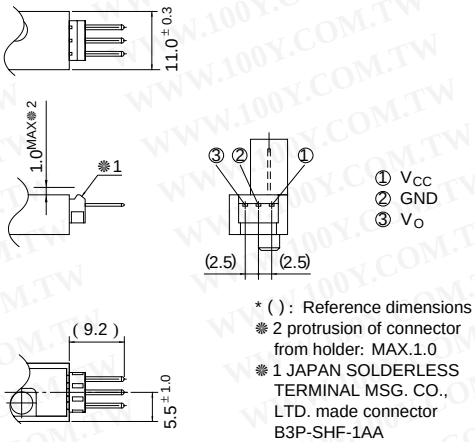
* Unspecified tolerances shall be as follows ;	
Dimensions(d)	Tolerance
d < 4.0	± 0.2
4.0 <= d < 16.0	± 0.3
16 <= d	± 0.5

* ( ) : Reference dimensions

❋ JAPAN AMP made EI 3-pin connector 171825-3

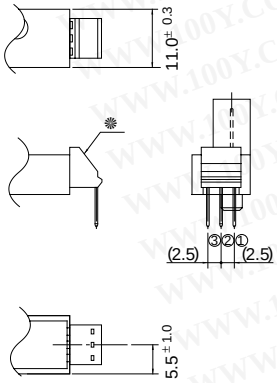
Recommended connectors on the inserted side 172053-3 etc. ❋❋

GP1A22LC (Same as **GP1A05** except connector)



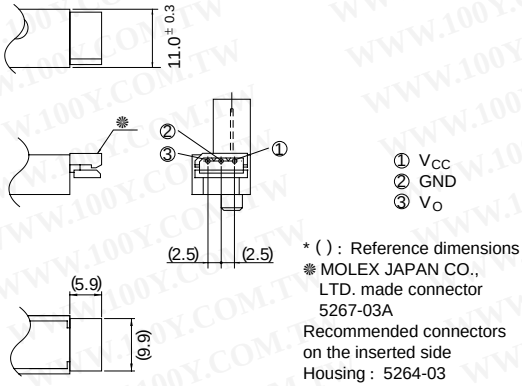
* ( ) : Reference dimensions
❋ 2 protrusion of connector from holder: MAX.1.0
❋ 1 JAPAN SOLDERLESS TERMINAL MSG. CO., LTD. made connector B3P-SHF-1AA
Recommended connectors on the inserted side
Housing : H3P-SHF-AA
Terminal : SHF-001T-0.8SS etc. ❋❋

GP1A23LC (Same as **GP1A05** except connector)



* ( ) : Reference dimensions
❋ JAPAN SOLDERLESS TERMINAL MSG. CO., LTD. made connector BS3P-SHF-1AA
Recommended connectors on the inserted side
Housing : (H3P-SHF-AA) etc ❋❋
Terminal : (SHF-001T-0.8SS) etc.

GP1A25LC (Same as **GP1A05** except connector)

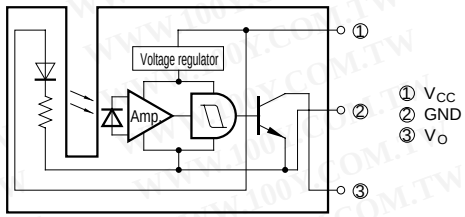


* ( ) : Reference dimensions
❋ MOLEX JAPAN CO., LTD. made connector 5267-03A
Recommended connectors on the inserted side
Housing : 5264-03
Terminal : 5263PBT

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

" 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."

Internal connection diagram （Common to 4 models）



■ Absoulte Maximum Ratlngs

(Ta= 25˚C)

Parameter		Symbol	Rating	Unit
Supply voltage	GP1A05	V_{CC}	- 0.5 to + 10	V
	GP1A22LC/GP1A23LC/GP1A25LC		- 0.5 to + 8	
*1Output voltage		V_O	- 0.5 to + 28	V
*2Low level output current		I_{OL}	50	mA
*3Operating temperature		T_{opr}	- 20 to + 75	˚C
*3Storage temperature	GP1A05/GP1A22LC/GP1A23LC	T_{stg}	- 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, Vcc = 5V, Ta = 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} x 0.9	-	-	V
*5Response frequency	f	*4R_L= 47kΩ	-	-	3 000	Hz

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

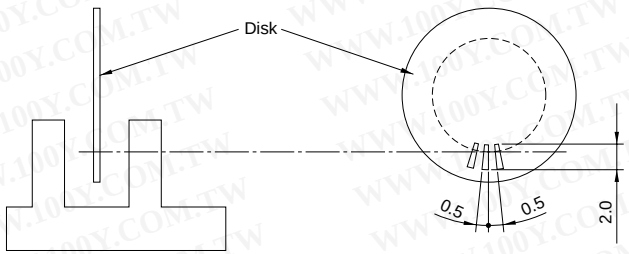


Fig. 1 Low Level Output Current vs. Ambient Temperature

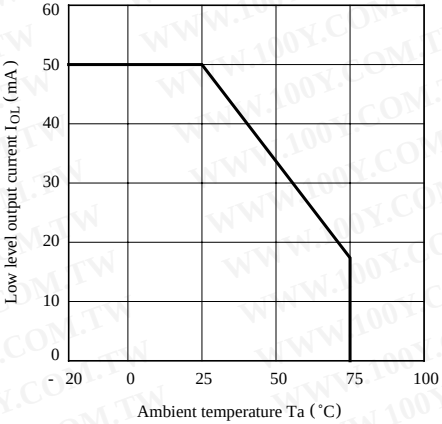


Fig. 2 Low Level Output Voltage vs. Low Level Output Current

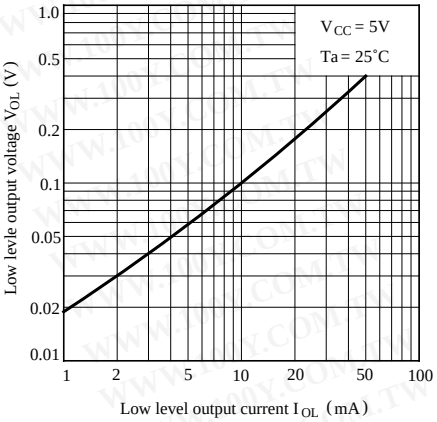


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

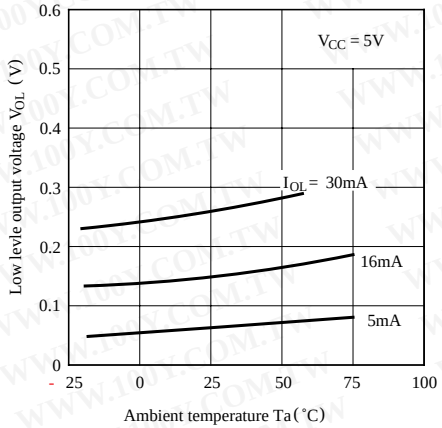


Fig. 4 Supply Current vs. supply Voltage

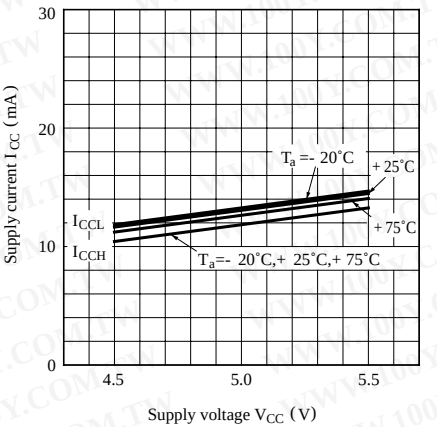
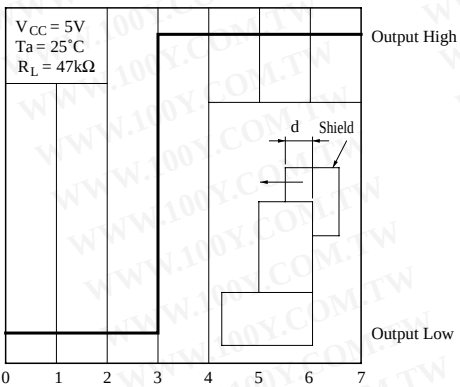


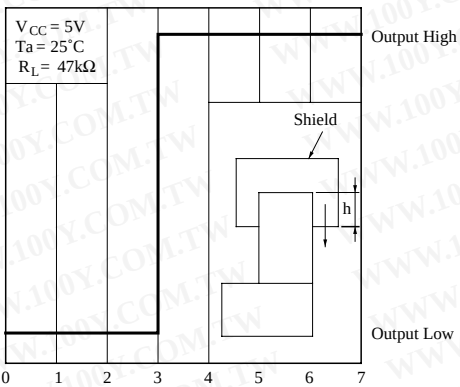
Fig. 5 Detecting Position Characteristics (1)



Detecting position d = 3.5 ± 0.3mm

(**GP1A22LC/GP1A23LC/GP1A25LC**: d = 3.5 ± 0.5mm)

Fig. 6 Detecting Position Characteristics (2)



Detecting position h= 3.0 $^{+2.0}_{-1.5}$mm

■ 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.
	AWG 26 to 20	Bulk	Brass	170204-1
			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	Product shape	Model No.
	AWG 26 to 22	Bulk	170369-1
		Chain	170354-1
	AWG 30 to 26	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		
Special terminal Model. No.	AWG size	Material	Model No.	AWG size	Material	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 μF 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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- Office automation equipment
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- Industrial control
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- Consumer electronics

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- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

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- Nuclear power control equipment
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