GP1A38L5/GP1A38L7

Multi-channel OPIC Photointerrupter with Connector

■ Features

1. Multi-channel type
   GP1A38L5 (5-channel type)
   GP1A38L7 (7-channel type)
2. Built-in Schmidt trigger circuit
3. LSTTL and TTL compatible output
4. Can be mounted with screws

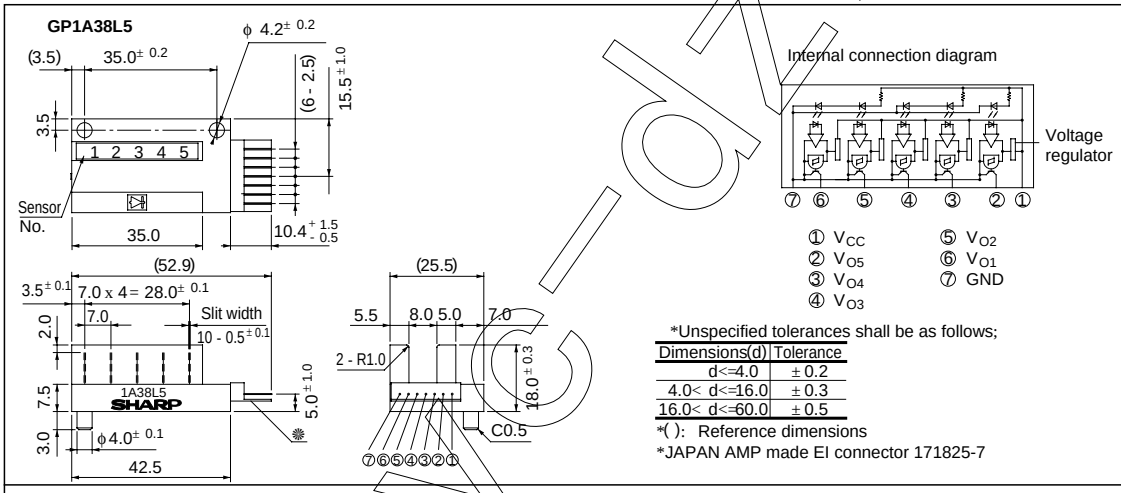
■ Applications

1. Laser beam printers
2. Copiers

*"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.

■ Outline Dimensions

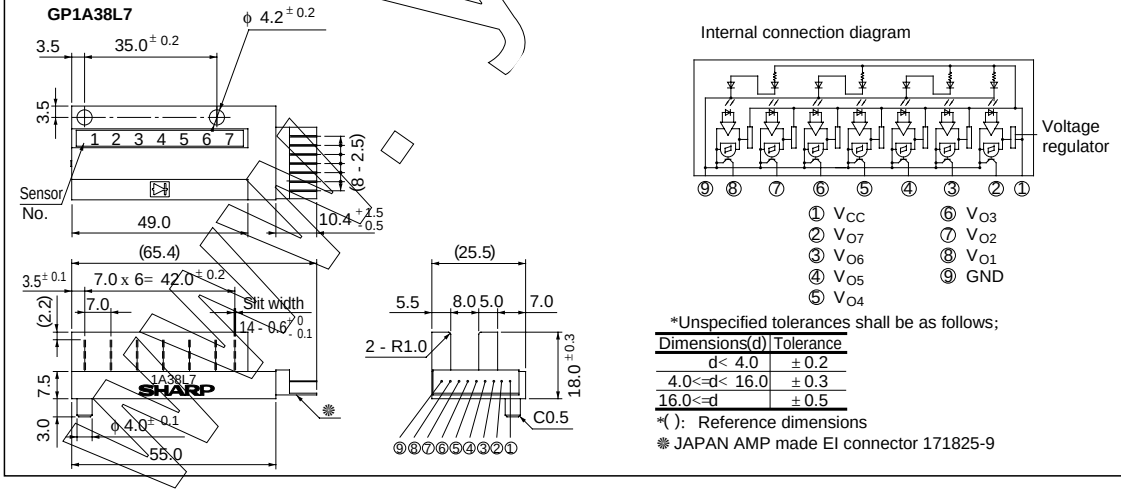
(Unit : mm)



*Unspecified tolerances shall be as follows;

Dimensions(d)	Tolerance
d<=4.0	± 0.2
4.0< d<=16.0	± 0.3
16.0< d<=60.0	± 0.5

*( ): Reference dimensions
*JAPAN AMP made EI connector 171825-7



*Unspecified tolerances shall be as follows;

Dimensions(d)	Tolerance
d< 4.0	± 0.2
4.0<=d< 16.0	± 0.3
16.0<=d	± 0.5

*( ): Reference dimensions
✺ JAPAN AMP made EI connector 171825-9

■ Absolute Maximum Ratings (Ta = 25˚C)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	- 0.5 to + 7	V
Output voltage	V_O	28	V
Output current	I_{OL}	50	mA
*1Operating temperature	T_{opr}	- 20 to + 75	˚C
*1Storage temperature	T_{stg}	- 40 to + 85	˚C

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

■ Electro-optical Characteristics (Unless otherwise specified V_{CC} = 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	GP1A38L5	I_{CCL}	Light beam uninterrupted	-	-	80	mA
	GP1A38L7			-	-	110	mA
Low level output voltage		V_{OL}	Light beam uninterrupted, I_{OL} = 16mA	-	-	0.35	V
High level supply current	GP1A38L5	I_{CCH}	Light beam interrupted	-	-	80	mA
	GP1A38L7			-	-	110	mA
High level output voltage		V_{OH}	Light beam interrupted, *2 R_L = 47kΩ	V_{CC} x 0.9	-	-	V
Response frequency		f	R_L = 47kΩ	-	-	3 000	Hz

*2 Connects between V_{CC} and output terminal.

Fig. 1 Low Level Output Current vs. Ambient Temperature

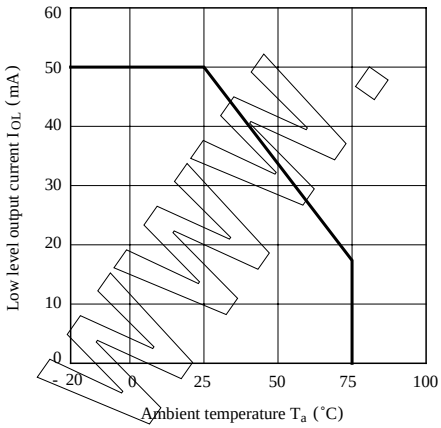


Fig. 2 Low Level Output Voltage vs. Low Level Output Current

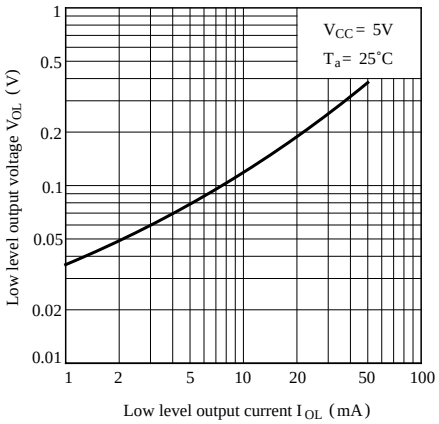


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

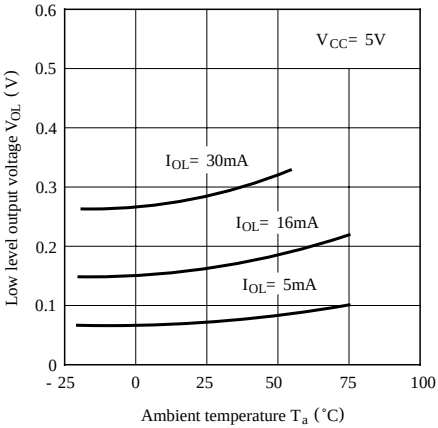


Fig.4-a Supply Current vs. Supply Voltage (GP1A38L5)

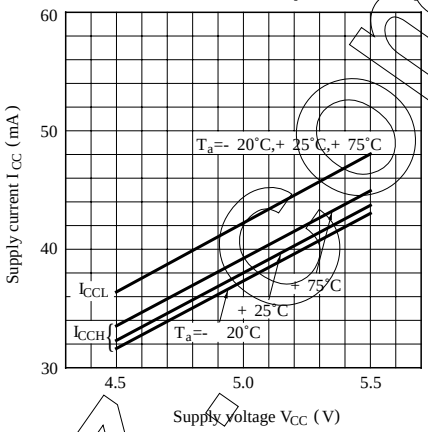


Fig.4-b Supply Current vs. Supply Voltage (GP1A38L7)

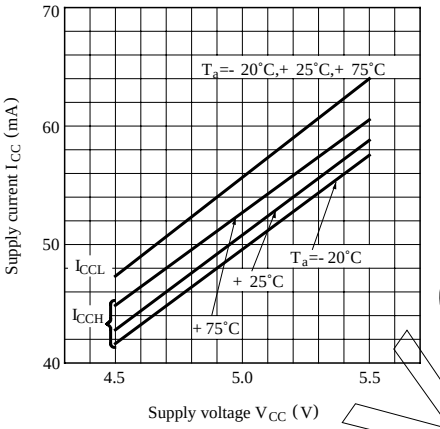


Fig.5-a Detecting Position Characteristics (1) (GP1A38L5)

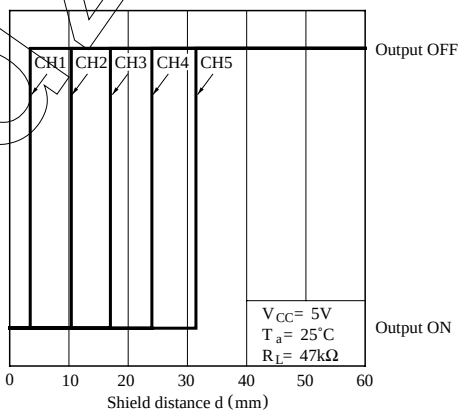
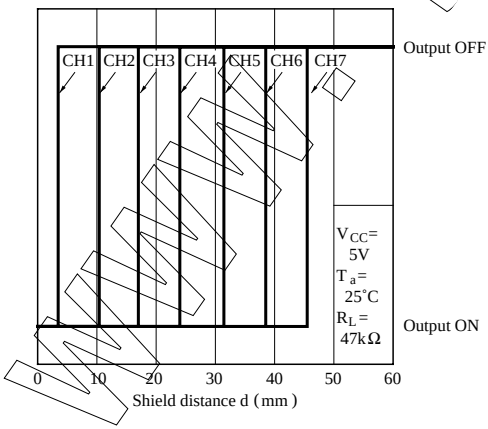
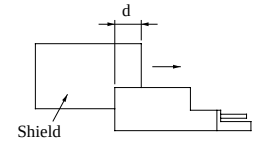


Fig.5-b Detecting Position Characteristics (1) (GP1A38L7)



Measuring Method for Detecting Position Characteristics (1)



GP1A38L5

CH	Detecting distance d
1	3.5 ± 0.5mm
2	10.5 ± 0.5mm
3	17.5 ± 0.5mm
4	24.5 ± 0.5mm
5	31.5 ± 0.5mm

GP1A38L7

CH	Detecting distance d
1	3.5 ± 0.5mm
2	10.5 ± 0.5mm
3	17.5 ± 0.5mm
4	24.5 ± 0.5mm
5	31.5 ± 0.5mm
6	38.5 ± 0.5mm
7	45.5 ± 0.5mm

Fig.6-a Detecting Position Characteristics (2) (GP1A38L5)

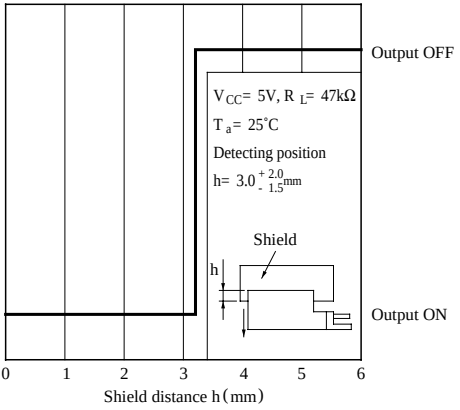
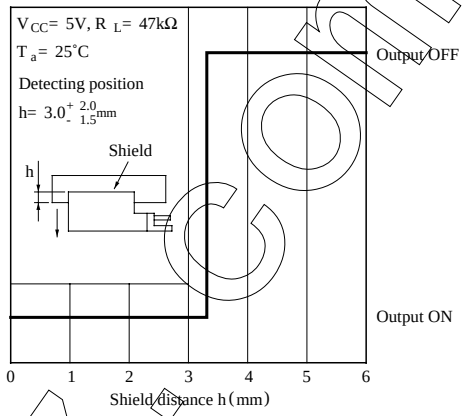


Fig.6-b Detecting Position Characteristics (2) (GP1A38L7)



■ Precautions for Use

(1) 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 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 used 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 0.01μF between Vcc and GND near the device.

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

NOTICE

- The circuit application examples in this publication are provided to explain representative applications of SHARP devices and are not intended to guarantee any circuit design or license any intellectual property rights. SHARP takes no responsibility for any problems related to any intellectual property right of a third party resulting from the use of SHARP's devices.
- Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device. SHARP reserves the right to make changes in the specifications, characteristics, data, materials, structure, and other contents described herein at any time without notice in order to improve design or reliability. Manufacturing locations are also subject to change without notice.
- Observe the following points when using any devices in this publication. SHARP takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet nor meet the following conditions:

(i) The devices in this publication are designed for use in general electronic equipment designs such as:
- Personal computers
- Office automation equipment
- Telecommunication equipment [terminal]
- Test and measurement equipment
- Industrial control
- Audio visual equipment
- Consumer electronics

(ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
- Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

(iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
- Space applications
- Telecommunication equipment [trunk lines]
- Nuclear power control equipment
- Medical and other life support equipment (e.g., scuba).

- Contact a SHARP representative in advance when intending to use SHARP devices for any "specific" applications other than those recommended by SHARP or when it is unclear which category mentioned above controls the intended use.
- If the SHARP devices listed in this publication fall within the scope of strategic products described in the Foreign Exchange and Foreign Trade Control Law of Japan, it is necessary to obtain approval to export such SHARP devices.
-
- Contact and consult with a SHARP representative if there are any questions about the contents of this publication.