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

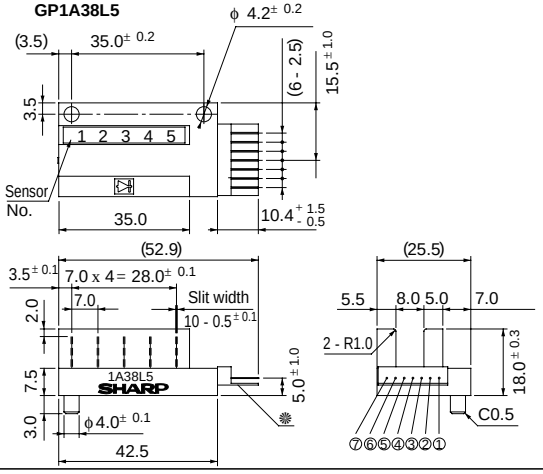
1. Laser beam printers
2. Copiers

*"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.

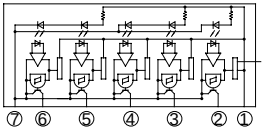
■ Outline Dimensions

(Unit : mm)

GP1A38L5



Internal connection diagram



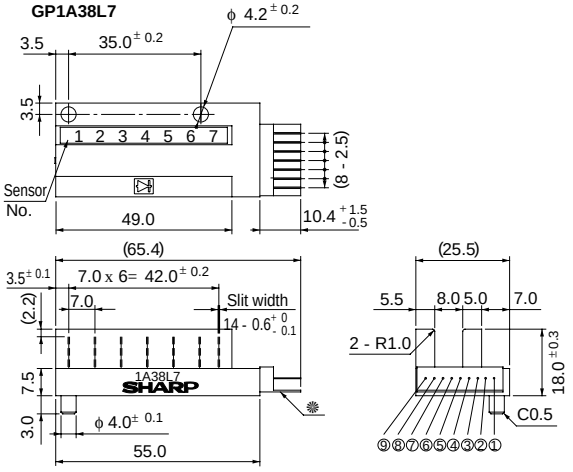
① V_{CC} ⑤ V_{O2}
② V_{O5} ⑥ V_{O1}
③ V_{O4} ⑦ GND
④ V_{O3}

*Unspecified tolerances shall be as follows;

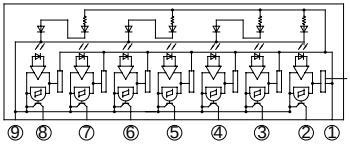
Dimensions(d)	Tolerance
d<=4.0	± 0.2
4.0< d<=16.0	± 0.3
16.0< d<=60.0	± 0.5

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

GP1A38L7



Internal connection diagram



① V_{CC} ⑥ V_{O3}
② V_{O7} ⑦ V_{O2}
③ V_{O6} ⑧ V_{O1}
④ V_{O5} ⑨ GND
⑤ V_{O4}

*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, *2R_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

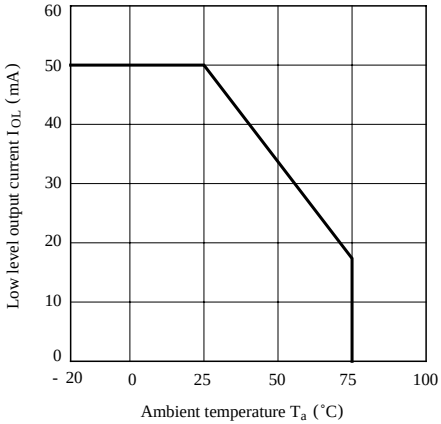


Fig. 2 Low Level Output Voltage vs. Low Level Output Current

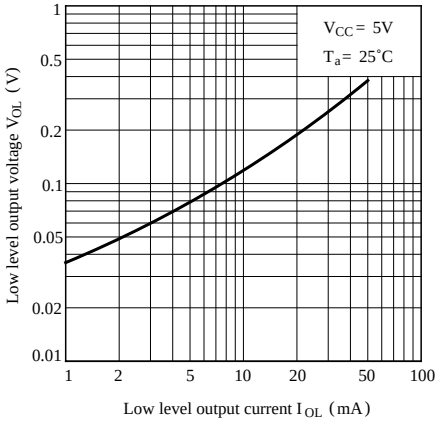


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

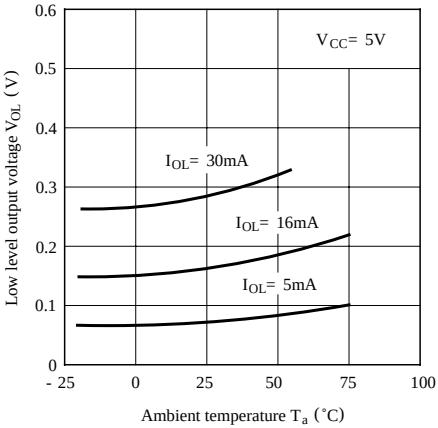


Fig.4-a Supply Current vs. Supply Voltage (GP1A38L5)

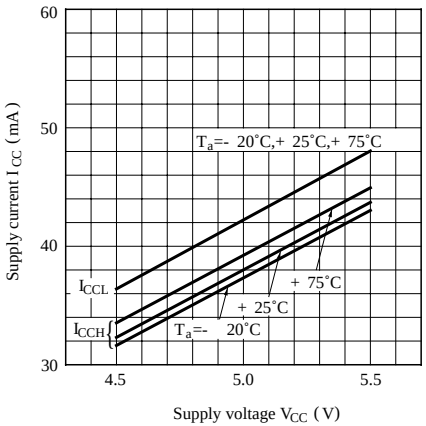


Fig.4-b Supply Current vs. Supply Voltage (GP1A38L7)

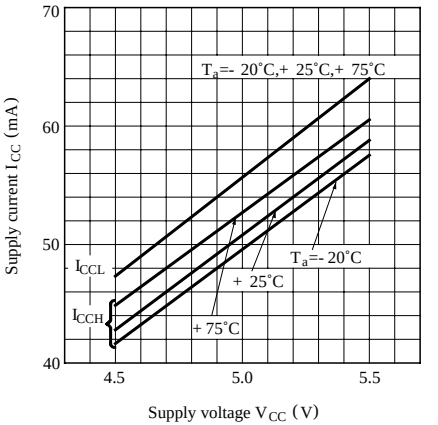


Fig.5-a Detecting Position Characteristics (1) (GP1A38L5)

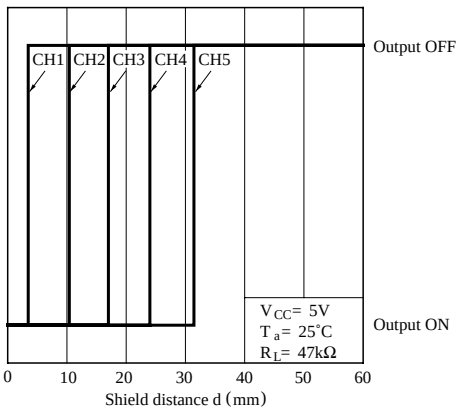
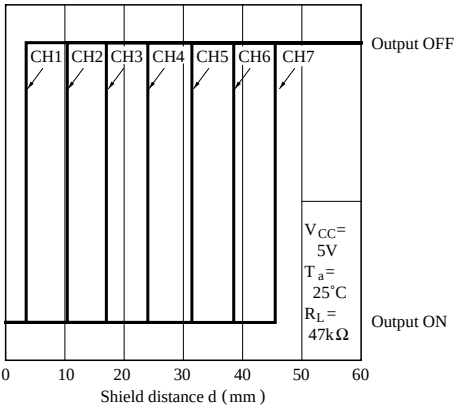
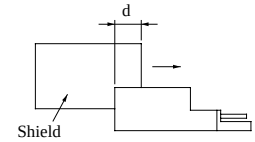


Fig.5-b Detecting Position Characteristics (1) (GP1A38L7)



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)

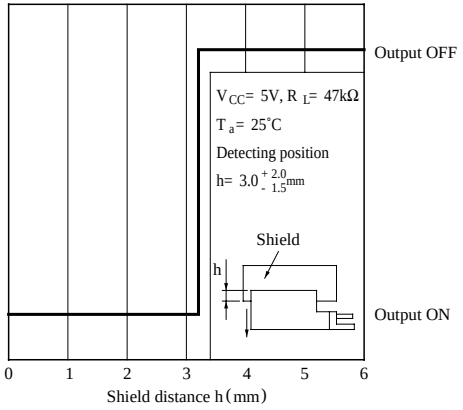
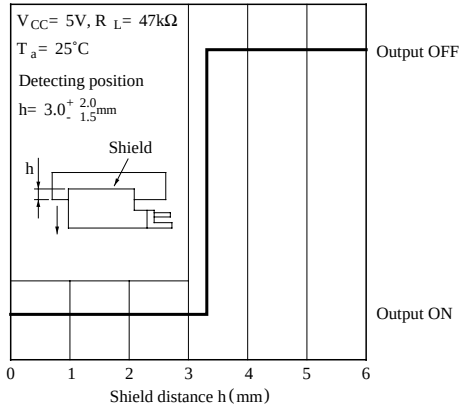


Fig.6-b Detecting Position Characteristics (2) (GP1A38L7)



■ 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".

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— Office automation equipment
— Telecommunication equipment [terminal]
— Test and measurement equipment
— Industrial control
— Audio visual equipment
— Consumer electronics

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— Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
— Traffic signals
— Gas leakage sensor breakers
— Alarm equipment
— Various safety devices, etc.

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— Telecommunication equipment [trunk lines]
— Nuclear power control equipment
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