

GP2A11

Light Modulation OPIC Photointerrupter

■ Features

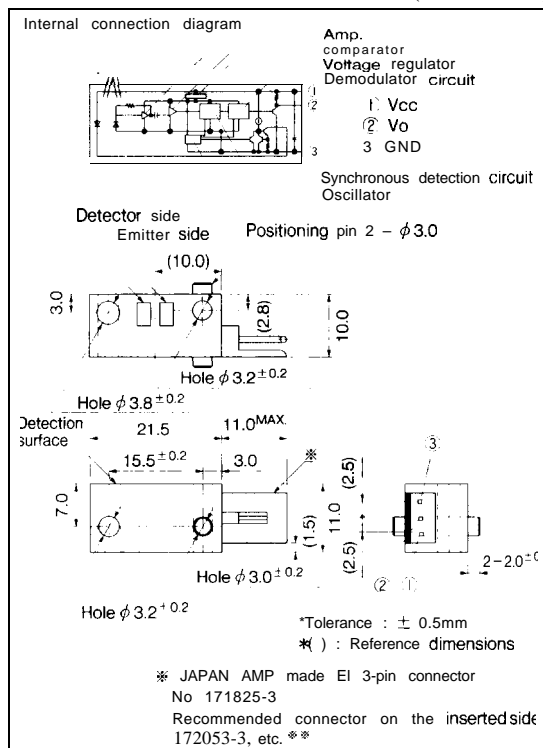
1. Light modulation type free from external disturbing light
(External disturbing light illuminance: MIN.2 000 lx)
2. Capable of TTL direct connection
3. With 3-pin connector provided for easier interface with peripheral control circuit

■ Applications

1. Copiers, printers
2. Facsimiles

■ outline Dimensions

(Unit : mm)



* "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 in the following table. (Page 896)

■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	Vcc	-0.5 to +16	V
*2 Output voltage	Vo	16	V
*1 Low level output current	I _{ol}	50	mA
** operating temperature	T _{opr}	-10 to +65	°C
*3 Storage temperature	T _{stg}	-40 to +80	°C

*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

(Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage	V_{CC}		4.5	5.0	5.5	v
Dissipation current	I_{cep}	Peak pulse value, $R_L = \infty$	—	—	100	mA
	I_{cc}	Smoothing value, $R_L = \infty$	—	—	20	mA
Low level output voltage	V_{OL}	*4 $I_{OI} = 16\text{mA}$	—	0.2	0.4	V
High level output voltage	V_{OH}	*5 $R_L = \infty$	4.7	—	—	v
Response time	"High" → "Low" propagation delay time	t_{PHL}	—	—	1	ms
	"Low" → "High" propagation delay time	t_{PLH}	—	—	1	ms
External disturbing light illuminance	E_{v1}	*7	2 000	—	—	lx
	E_{v2}	*8	2 000	—	—	lx

*4 Detecting condition

In Fig. (A) $d = 2$ to 5mm with OMS test card (white) as the reflective object (Specified by Sharp)

*5 Non-detecting condition

In Fig. (A) $d = 1$ mm or more with suede as the reflective object (Specified by Sharp)

*6 Response time

Fig. (B) shows test circuit for response time.

*7 E_{v1} : Reflective object surface illuminance

Illuminance that enables the OMS test card (white) to be detected with $d = 2$ to 5mm when the external disturbing light from the direction as indicated by the arrow, → irradiates light source 4 in Fig. (A)

*8 E_{v2} : Detection surface illuminance

Illuminance that does not allow for detection when the external disturbing light from the direction as indicated by the arrow, ⇐ irradiates light source A in Fig. (A)

Fig. (A) Test Condition and Arrangement

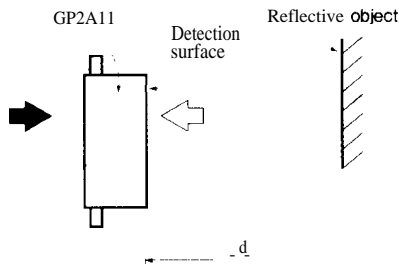


Fig. (B) Test Circuit for Response Time

Reflective object: OMS test card (white)

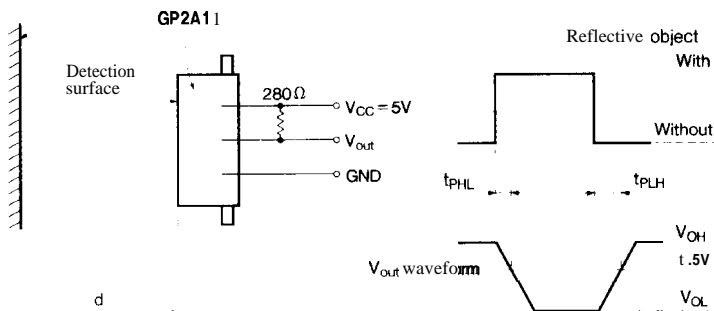


Fig. 1 Low Level output current vs. Ambient Temperature

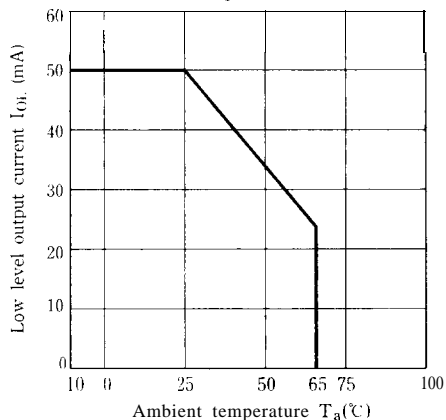


Fig. 2 Low Level Output Voltage vs. Low Level output Current

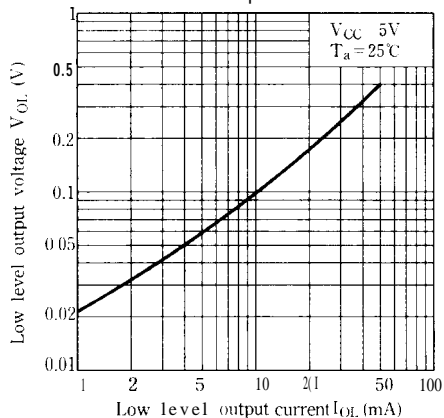


Fig. 3 Low Level Output Voltage vs. Ambient Temperature

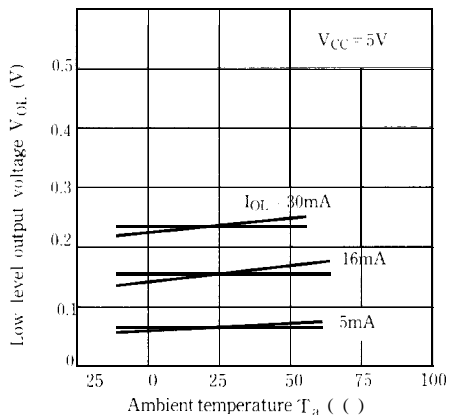


Fig. 4 Dissipation Current vs. Ambient Temperature

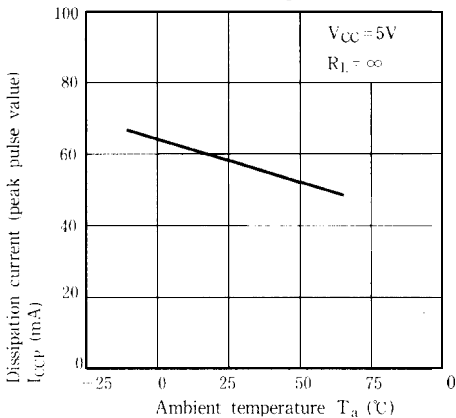
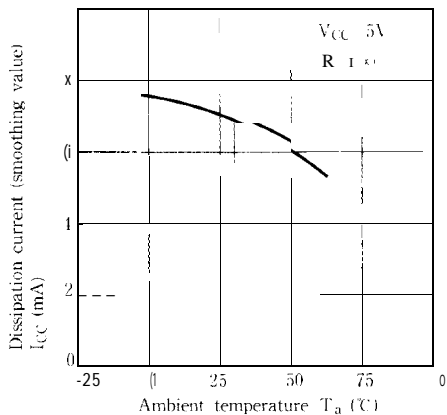


Fig. 5 Dissipation Current (Smoothing value) vs. Ambient Temperature



Photointerrupters



■ Recommended Connectors on the Inserted Sie

- 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.	
			Brass	170204-1	
	Bulk	Chain	Copper phosphide	170204-2	
			Brass	170262-1	
	AWG 26 to 20	Chain	Copper phosphide	170262-2	
			Brass	170205-1	
	AWG 30 to 26	Bulk	Copper phosphide	170205-2	
			Chain	I Brass I 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	
	26 to 22	Chain	170354-1		
			Bulk	170370-1	
30 to 26	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

- Please refer to the chapter "Precautions for use" (Page 78 to 93)