

# GP2A200LCS

## Light Modulation, Reflective Type Photointerrupter

### ■ Features

1. Light modulation type which is free from external disturbing light
2. Long focal distance type (Detecting range : 5 to 15mm)
3. Compact type

### ■ Applications

1. Copiers
2. Facsimiles
3. Laser beam printers

### ■ Absolute Maximum Ratings

(Ta=25°C)

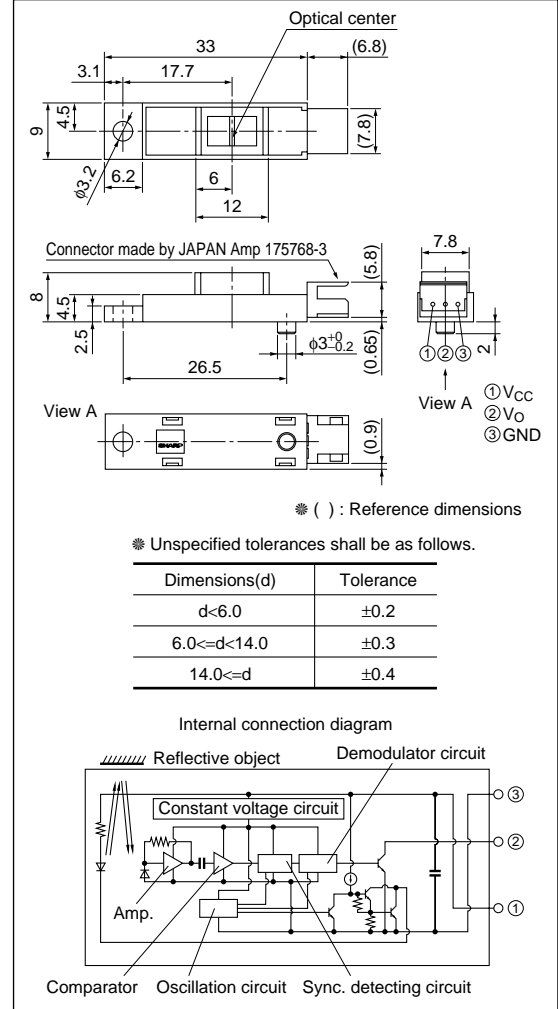
Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.5 to +7	V
Output voltage	V <sub>O</sub>	30	V
*1 Output current	I <sub>OL</sub>	50	mA
Operating temperature	T <sub>opr</sub>	-10 to +70	°C
*2 Storage temperature	T <sub>stg</sub>	-20 to +80	°C

\*1 Sink current refer to Fig.5

\*2 The connector should be plugged in/out at normal temperature

### ■ 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.

## ■ Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Supply voltage	V <sub>CC</sub>	—	4.75	—	5.25	V
Dissipation current (I)	I <sub>CC</sub>	V <sub>CC</sub> =5V, R <sub>L</sub> =∞, smoothing value	—	—	30	mA
Dissipation current (II)	I <sub>CCP</sub>	*3 V <sub>CC</sub> =5V, peak pulse value	—	—	150	mA
Low level output voltage	V <sub>OL</sub>	V <sub>CC</sub> =5V, I <sub>OL</sub> =16mA, at detecting time	—	—	0.4	V
High level output voltage	V <sub>OH</sub>	V <sub>CC</sub> =5V, R <sub>L</sub> =1kΩ, at non-detecting time	4.5	—	—	V
Non-detecting distance	LLHL	*4 Kodak 90% reflective paper, V <sub>CC</sub> =5V	—	—	90.0	mm
Detecting distance	LHLS	*4 Kodak 90% reflective paper, V <sub>CC</sub> =5V	—	—	2.0	mm
	LHLS	*4 Black paper, V <sub>CC</sub> =5V	—	—	5.0	mm
	LHLL	*4 Kodak 90% reflective paper, V <sub>CC</sub> =5V	22.0	—	—	mm
	LHLL	*4 Black paper, V <sub>CC</sub> =5V	15.0	—	—	mm
Response time	t <sub>PHL</sub>	*5 V <sub>CC</sub> =5V	—	—	1.0	ms
	t <sub>PLH</sub>	*5 V <sub>CC</sub> =5V	—	—	1.0	ms
External disturbing light illuminance	EV1	*6	3 000	—	—	lx
	EV2	*6	1 500	—	—	lx

\*3 Refer to Fig.1

\*4 Refer to Fig.2

\*5 Refer to Fig.3

\*6 Refer to Fig.4

### Fig.1 Test Condition for Peak Pulse Value I<sub>CCP</sub>

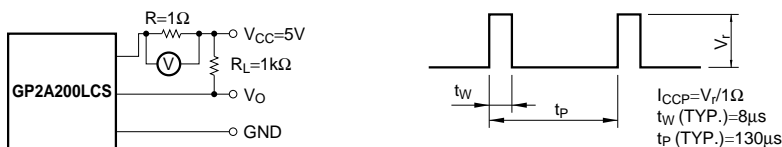


Fig.2 Test Condition for Detecting Distance Characteristics

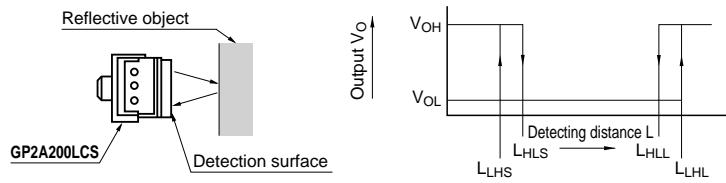


Fig.3 Test Circuit For Response Time

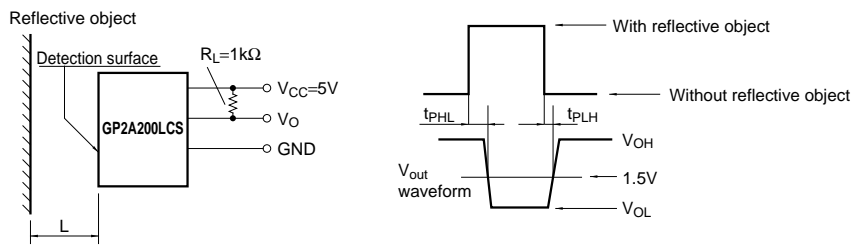
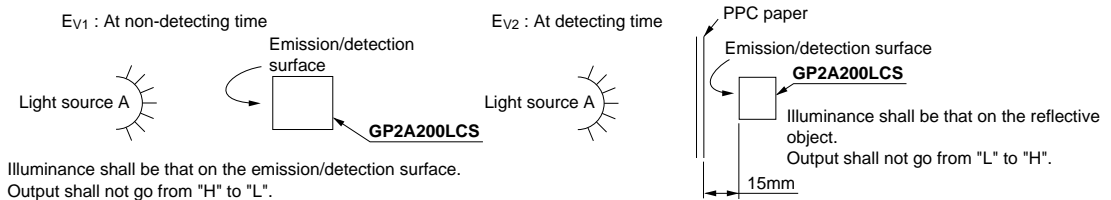
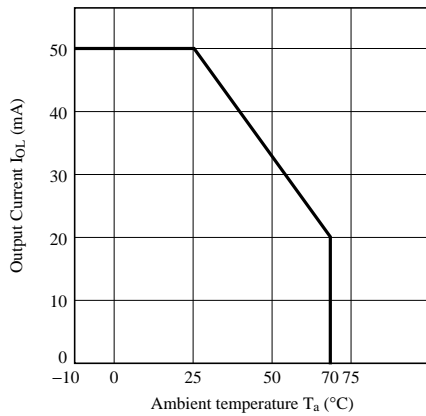


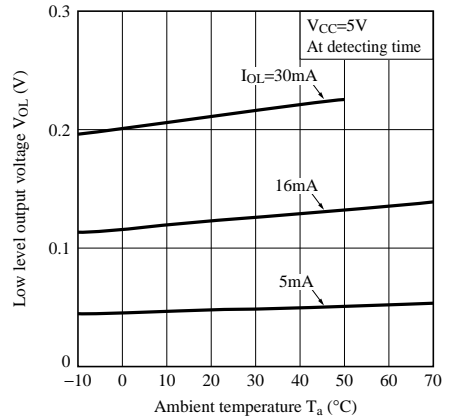
Fig.4 Test Condition for External Disturbing Light Illuminance



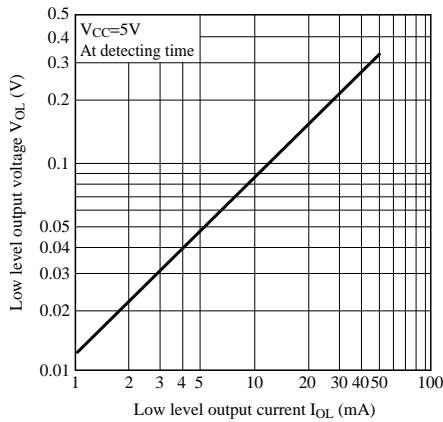
**Fig.5 Output Current vs. Ambient Temperature**



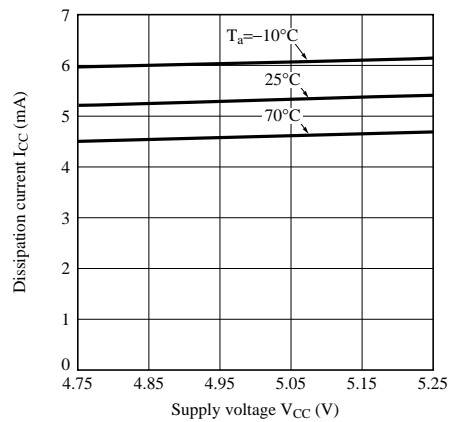
**Fig.6 Low Level Output Voltage vs. Ambient Temperature**



**Fig.7 Low Level Output Voltage vs. Low Level Output Current**



**Fig.8 Dissipation Current (Smoothing Value) vs. Ambient Temperature**



**■ Precautions for Use**

1. In order to stabilize power supply line, connect a by-pass capacitor of more than 0.33 $\mu$ F between  $V_{CC}$  and GND near the device.
2. For cleaning  
Acrylic resin is used as the material of the lens surface. As to cleaning, this refractive type photointerrupter shall not clean by cleaning materials absolutely. Dust and stain shall clean by air blow, or shall clean by soft cloth soaked in washing materials.
3. The connector should be plugged in / out at normal temperature.
4. As for other general precautions, refer to the chapter "Precautions for Use".

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    - Gas leakage sensor breakers
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    - Various safety devices, etc.
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