GP2A20/GP2A22

Light Modulation, Long Focal Distance Type OPIC Photointerrupter

■ Features

1. Light modulation type, free from external disturbing light
2. Long focal distance type
   Detecting range
   (**GP2A20**: 3 to 7mm)
   (**GP2A22**: 9 to 15mm)
3. Capable of TTL direct connection
4. With 3-pin connector provided for easier interface with peripheral control circuit

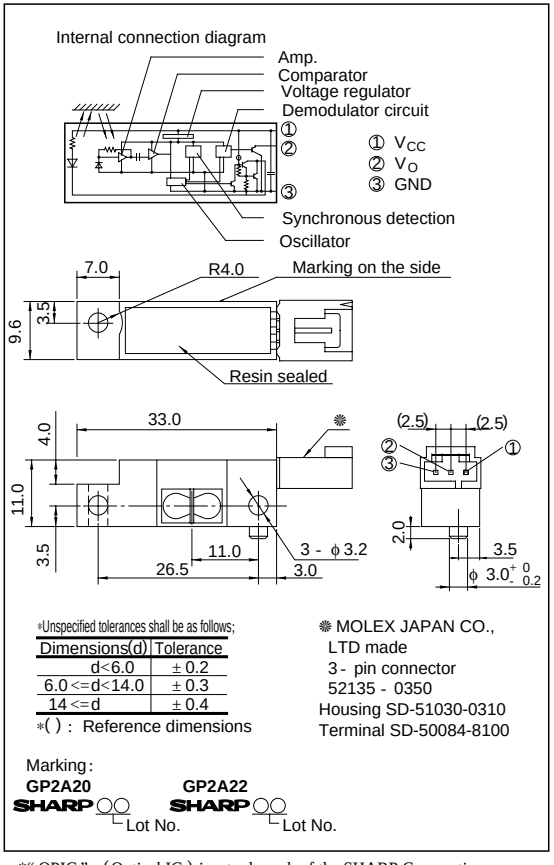
■ Applications

1. Copiers
2. Laser beam printers
3. Facsimiles

■ Line-ups

	Detecting range	
	3 to 7mm	9 to 15mm
Model No.	**GP2A20**	**GP2A22**

■ 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.

■ Absolute Maximum Ratings (Ta= 25˚C)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	- 0.5 to 7	V
*1Output voltage	V_O	30	V
*2Low level output current	I_{OL}	50	mA
*3Operating temperature	T_{opr}	- 10 to + 60	˚C
*3Storage temperature	T_{stg}	- 20 to + 80	˚C

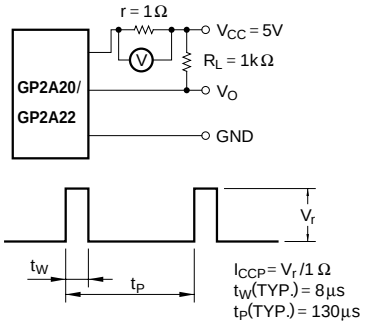
*1 Collector-emitter voltage of output transistor
*2 Collector current of output transistor
*3 The connector should be plugged in/out at normal temperature.

■ Electro - optical Characteristics

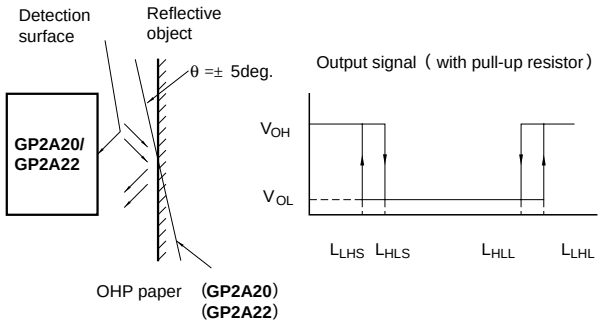
(V_{CC}= 5V, Ta= 25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating supply voltage		V_{CC}		4.75	-	5.25	V
Dissipation current	Peak pulse value	I_{ccp}	*4 r= 1Ω	-	-	150	mA
	Smoothing value	I_{CC}	R_L=∞	-	-	30	mA
Low level output voltage		V_{OL}	I_{OL}= 16mA at detecting time	-	-	0.4	V
High level output voltage		V_{OH}	R_L= 1kΩ at non-detecting time	4.5	-	-	V
Non-detecting distance	**GP2A20**	L_{LHL}	*5 Reflective object: Kodak 90% reflective paper	-	-	20	mm
	GP2A22			-	-	50	
			*5 Reflective object: Chloroprene rubber	-	-	25	
Minimum detecting distance	**GP2A20**	L_{HLS}	*5 Reflective object: Artwork tape	-	-	3.0	mm
	GP2A20		*5 Reflective object: Kodak 90% reflective paper	-	-	1.0	
	GP2A22			-	-	7.0	
	GP2A22		*5 Reflective object: Black paper	-	-	9.0	
	GP2A20		*5 Reflective object: OHP paper, θ = 5deg. (X,Y direction)	-	-	3.0	
	GP2A22			-	-	9.0	
Maximum detecting distance	**GP2A20**	L_{HLL}	*5 Reflective object: Artwork tape	7.0	-	-	mm
	GP2A20		*5 Reflective object: Kodak 90% reflective paper	9.0	-	-	
	GP2A22			17.0	-	-	
	GP2A22		*5 Reflective object: Black paper	15.0	-	-	
	GP2A20		*5 Reflective object: OHP paper,θ = 5deg. (X,Y direction)	7.0	-	-	
	GP2A22			15.0	-	-	
Response time	"High→Low" propagation delay time	t_{PHL}	*6	-	-	1	ms
	"Low→High" propagation delay time	t_{PLH}		-	-	1	ms

*4 Test Condition for Dissipation Current (Peak Pulse Value)



*5 Test Condition for Detecting Distance Characteristics



*6 Test Condition for Response Time

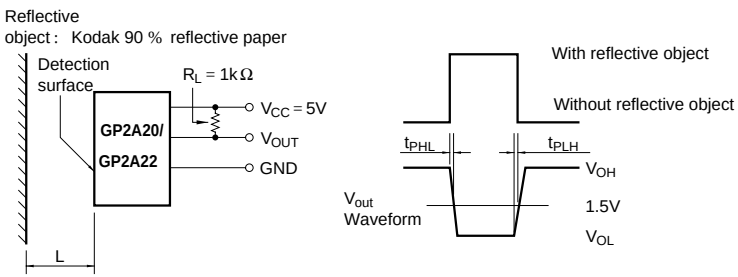


Fig. 1 Low Level Output Current vs. Ambient Temperature

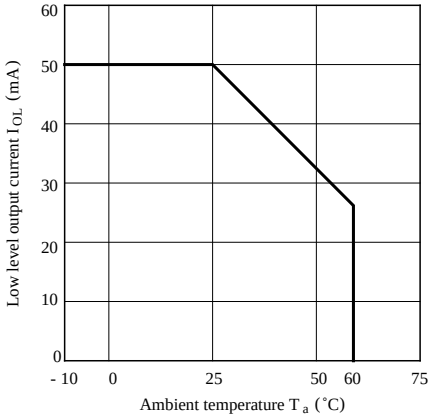


Fig. 2 Low Level Output Voltage vs. Ambient Temperature

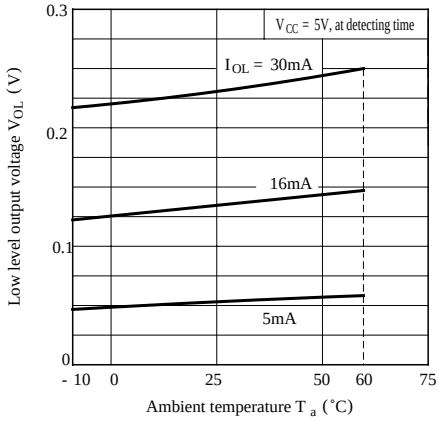


Fig. 3 Low Level Output Voltage vs. Low Level Output Current

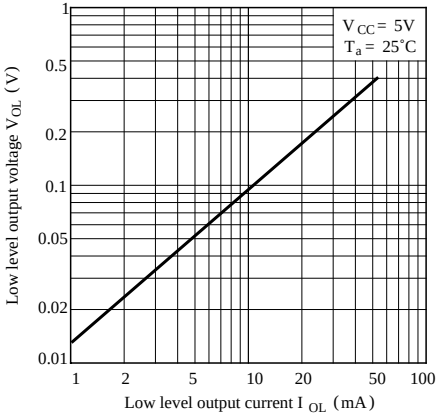
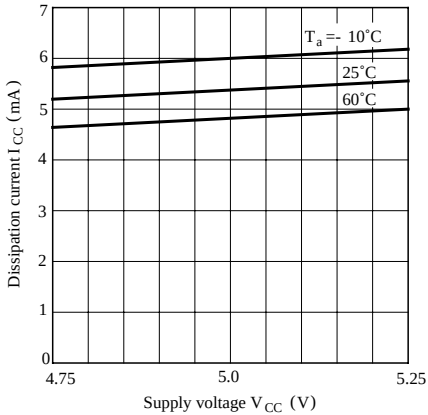


Fig. 4 Dissipation Current (Smoothing Value) vs. Supply Voltage



■ Precautions for Use

(1) In order to stabilize power supply line, connect a by-pass capacitor of more than 0.33μF between Vcc and GND nea

(2) Please do not perform dip cleaning or ultrasonic cleaning because lens part of this product is an optical device of acrylic resin.

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

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— 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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