GP2A25 Datasheet

DiGi Electronics Part Number	GP2A25-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	GP2A25
Description	SENSOR OPT REFL 3MM-7MM MODULE
Detailed Description	Reflective Optical Sensor 0.118" ~ 0.276" (3mm ~ 7mm) ADJ Black Paper, Kodak® Gray Card, White Paper Module, Connector

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Manufacturer Product Number:	Manufacturer:
GP2A25	Sharp Microelectronics
Series:	Product Status:
-	Obsolete
Sensing Distance:	Sensing Method:
0.118" ~ 0.276" (3mm ~ 7mm) ADJ	Reflective
Sensing Object:	Output Configuration:
Black Paper, Kodak® Gray Card, White Paper	-
Sensing Light:	Mounting Type:
-	Chassis Mount
Voltage - Supply:	Package / Case:
4.75V ~ 5.25V	Module, Connector
Features:	
Long Focal Distance	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.49.8000

GP2A25

Light Modulation, Reflection Type Photointerrupter

■ Features

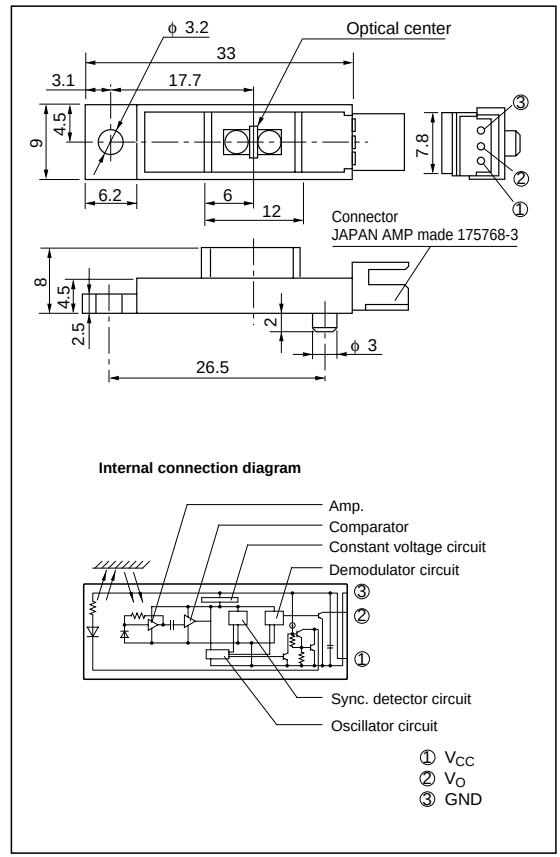
1. Light modulation system impervious to external disturbing light
2. Compact and 3-pin connector output type
   (Volume : 30% less than **GP2A20**)
3. Long focal distance type (Optimum detecting distance : 3 to 7 mm)
4. Capable of TTL direct connection

■ Applications

1. Copiers
2. Facsimiles
3. LBPs

■ 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	Remarks
Supply voltage	V_{CC}	- 0.5 to+ 7	V	-
Output voltage	V_O	30	V	-
Output current	I_{OL}	50	mA	Sink current *1
Operating temperature	T_{opr}	- 10 to+ 60	˚C	The connector should be plugged in/out at normal temperature.
Storage temperature	T_{stg}	- 20 to+ 80	˚C	

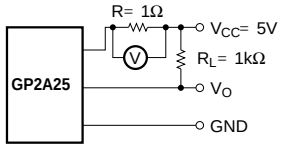
*1 Output current vs. ambient temperature : Per Fig. 1.

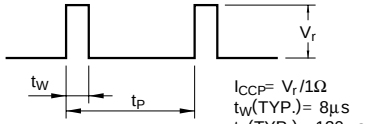
■ Electro-optical Characteristics

(Vcc=5V, Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}	-	4.75	-	5.25	V
Dissipation current (I)	I_{CC}	V_{CC}= 5V, R_L=∞, smoothing value	-	-	30	mA
Dissipation current (II)	I_{CCP}	*1 V_{CC}= 5V, peak pulse value	-	-	150	mA
Low level output voltage	V_{OL}	V_{CC}=5V, I_{OL}=16mA, at detecting time	-	-	0.4	V
High level output voltage	V_{OH}	V_{CC}=5V, R_L=1kΩ, at non-detecting time	4.5	-	-	V
Non-detecting distance	L_{LHL}	*2 Kodak 90% reflective paper, V_{CC}=5V	-	-	27.0	mm
Detecting distance	L_{HLS}	*2 Kodak 90% reflective paper, V_{CC}=5V	-	-	1.0	mm
		*2 Black paper, V_{CC}=5V	-	-	3.0	mm
	L_{HLL}	*2 Kodak 90% reflective paper, V_{CC}=5V	9.0	-	-	mm
		*2 Black paper, V_{CC}=5V	7.0	-	-	mm
Response time	t_{PHL}	*3 V_{CC}= 5V	-	-	1.0	ms
	t_{PLH}		-	-	1.0	ms
External disturbing light illuminance	E_{V1}	*4	3 000	-	-	lx
	E_{V2}		1 500	-	-	lx

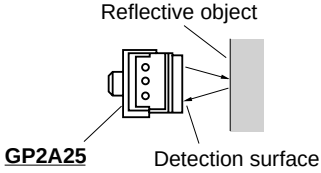
*1 Test Condition for Peak Pulse Value I_{CCP}

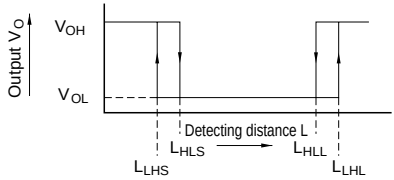




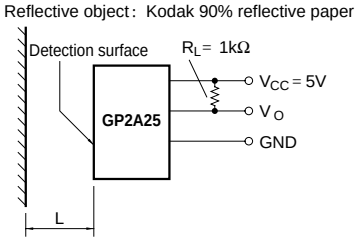
I_{CCP}= V_r/1Ω
t_W(TYP.)= 8μs
t_P(TYP.)= 130μs

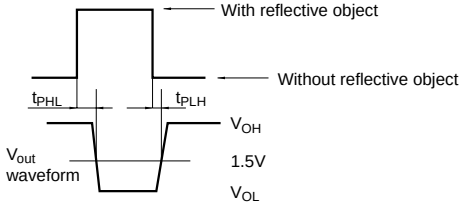
*2 Test Condition for Detecting Distance Characteristics





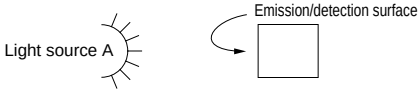
*3 Test Circuit for Response Time





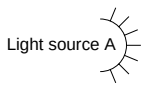
*4 Test Condition for External Disturbing Light Illuminance

E_{V1} : At non-detecting time



Illuminance shall be that on the emission/detection surface.
Output shall not go from "H" to "L".

E_{V2} : At detecting time



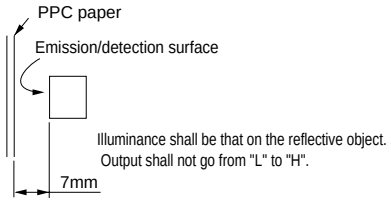


Fig. 1 Low Level Output Current vs. Ambient Temperature

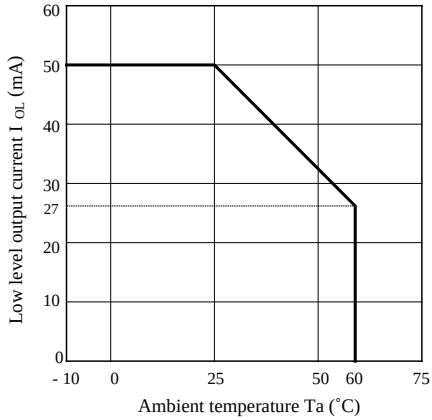


Fig. 2 Low Level Output voltage vs. Ambient Temperature

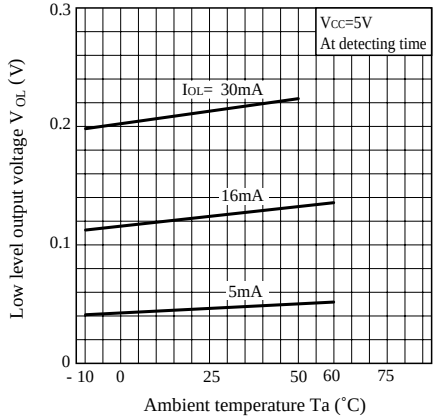


Fig. 3 Low Level Output Voltage vs. Low Level Output Current

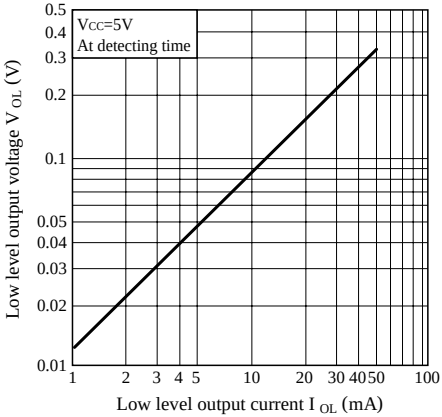
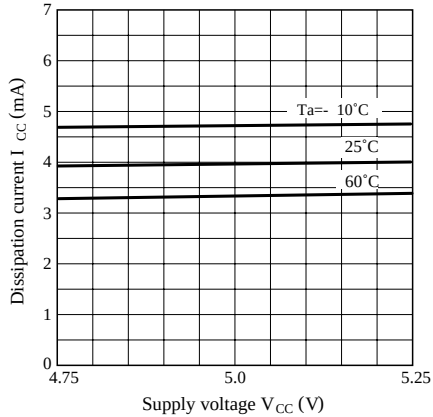


Fig. 4 Dissipation current (Smoothing Value) vs. Ambient Temperature



(Precautions for Use)

1) In order to stabilize power supply line, connect a by-pass capacitor of more than 0.33μ F between V_{CC} and GND near the device.
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 agent.
   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 contact us.

● As for other general precautions, refer to the chapter "Precautions for Use".

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