

# GP2A16/GP2A18F

## Visible Light Cut-off Type Photointerrupters with Connector

### ■ Features

1. Visible light cut-off type
2. Dust-protection type (**GP2A18F**)
3. Long focal distance type  
Detecting range: **GP2A16**: 2.0 to 7.0 mm,  
**GP2A18F**: 4.0 to 5.0 mm
4. With a 3-pin connector for easier interface  
with control circuit

### ■ Applications

1. Printers
2. Copies
3. Facsimiles

### ■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	7	V
*1 Output voltage	V <sub>O</sub>	30	V
*2 Low level output current	I <sub>OL</sub>	6	mA
*3 Operating temperature	T <sub>opr</sub>	- 10 to + 70	°C
*3 Storage temperature	T <sub>stg</sub>	- 40 to + 80	°C

\*1 At non detection (**GP2A16**)

At detection (**GP2A18F**)

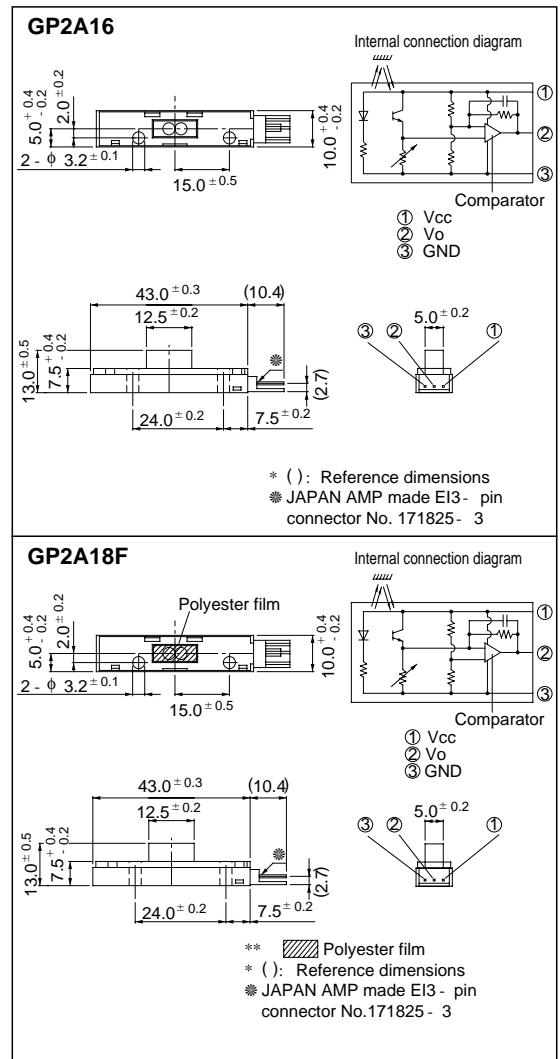
\*2 At detection (**GP2A16**)

At non detection (**GP2A18F**)

\*3 The connector should be plugged in/out at normal temperature.

### ■ Outline Dimensions

(Unit : mm)



**Electro-optical Characteristics**

(Unless otherwise specified,  $V_{CC}= 5V, T_a= 25^{\circ}C$ )

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Operating supply voltage	$V_{CC}$	$T_a = -10 \text{ to } +70^{\circ}C$	4.5	5.0	5.5	V
Dissipation current	$I_{CC}$	GP2A16 $V_{CC}= 5V, R_L = \infty, *5$	-	27	50	mA
		GP2A18F $V_{CC}= 5V, R_L = \infty, *4$	-	27	50	mA
Low level output voltage	$V_{OL}$	GP2A16 $V_{CC}= 5V, I_{OL}= 3mA, *4$	-	0.2	0.4	V
		GP2A18F $V_{CC}= 5V, I_{OL}= 3mA, *5$	-	0.2	0.4	V
High level output voltage	$V_{OH}$	GP2A16 $V_{CC}= 5V, R_L= 10k\Omega, *5$	4.7	-	-	V
		GP2A18F $V_{CC}= 5V, R_L= 10k\Omega, *4$	4.7	-	-	V
*6 Response time	Rise time	$R_L= 10k\Omega$	-	-	2.0	ms
	Fall time		-	-	2.0	ms

\*4 At detection

d= 2.0 to 7.0mm using black artwork tape as the reflective object with no external disturbing light as shown in Fig.1 (GP2A16)

d= 4.0 to 5.0mm using white PPC paper as the reflective object with no external disturbing light as shown in Fig.1 (GP2A18F)

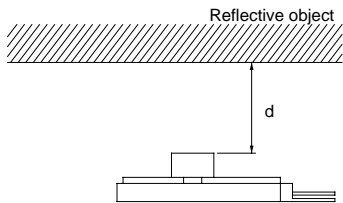
\*5 At non detection

d= 11.0mm or more using black suede as the reflective object with no external disturbing light as shown in Fig.1 (GP2A16)

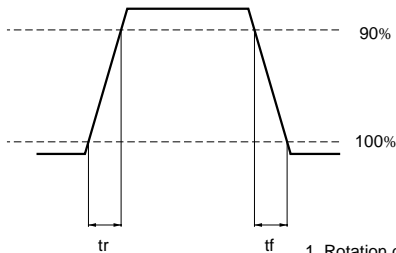
d= 4.0 to 5.0mm using black artwork tape as the reflective object with no external disturbing light as shown in Fig.1 (GP2A18F)

\*6 Definition of response time: As shown in Fig.2

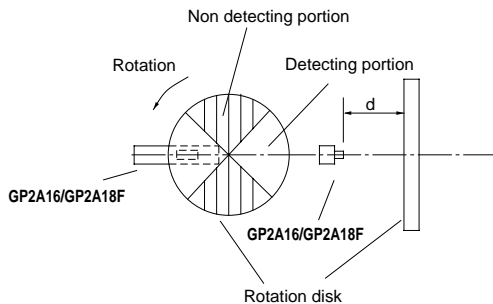
**Fig. 1 Vo Test Arrangement**



**Fig. 2 Vout waveform**

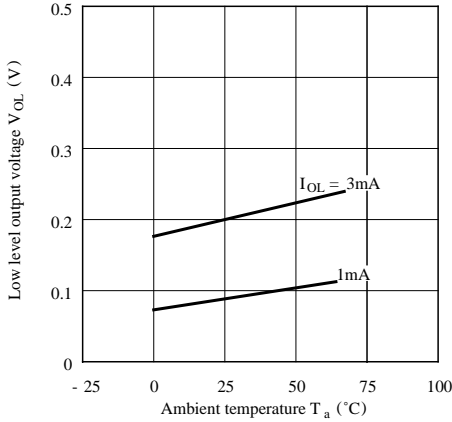


**Test Arrangement**

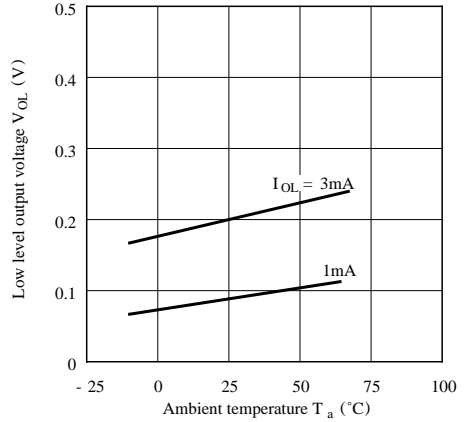


1. Rotation disk shall be  $\phi$  40mm or more. And it is in accordance with above test arrangement.
2. Rotation frequency shall be 5Hz or less. Output shall not be DC.

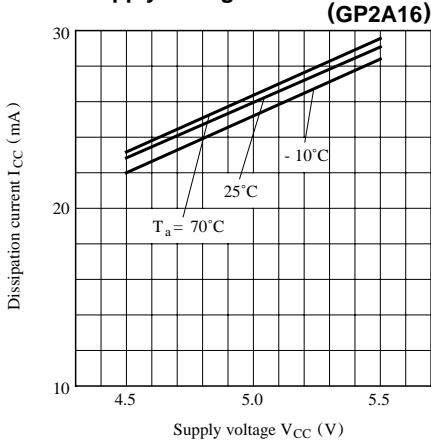
**Fig. 3-a Low Level Output Voltage vs. Ambient Temperature (GP2A16)**



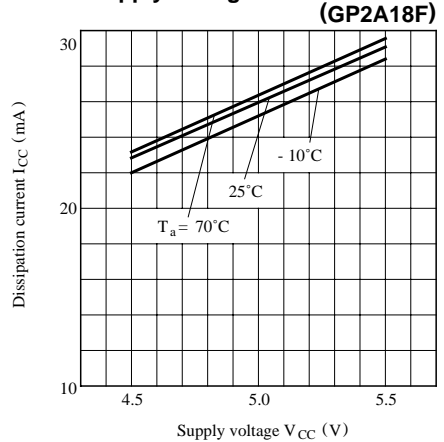
**Fig. 3-b Low Level Output Voltage vs. Ambient Temperature (GP2A18F)**



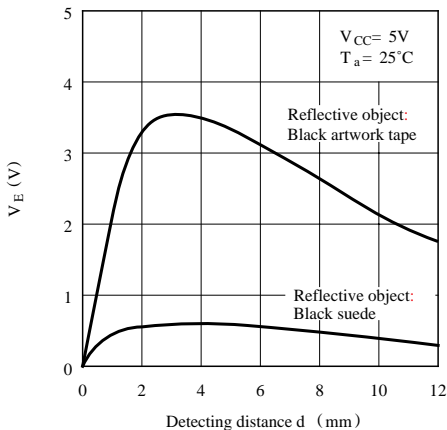
**Fig. 4-a Dissipation Current vs. Supply Voltage (GP2A16)**



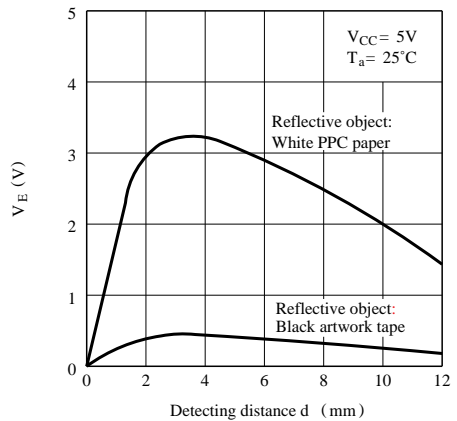
**Fig. 4-b Dissipation Current vs. Supply Voltage (GP2A18F)**



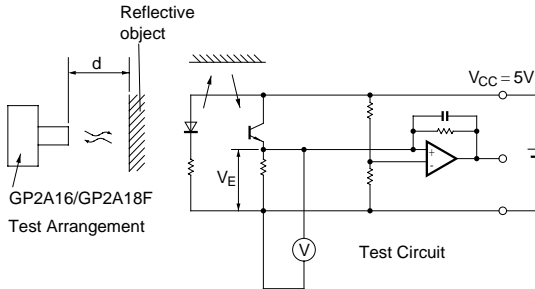
**Fig. 5-a Detecting Distance Characteristics (GP2A16)**



**Fig. 5-b Detecting Distance Characteristics (GP2A18F)**



**Test Circuit for Detecting Position Characteristics  
(GP2A16/GP2A18F)**



**Recommended Connectors on the Inserted Side**

**● 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	phosphor bronze	170204-2		
		Brass	170262-1		
	Chain	phosphor bronze	170262-2		
		Bulk	Brass	170205-1	
phosphor bronze	170205-2				
AWG 30 to 26	Chain	Brass	170263-1		
		phosphor bronze	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: phosphor bronze)	AWG size	Product shape		Model No.	
		Bulk		170369-1	
	26 to 22	Chain		170354-1	
		30 to 26	Bulk		170370-1
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: phosphor bronze

● Please refer to the chapter “Precautions for Use” (Page 78 to 93)