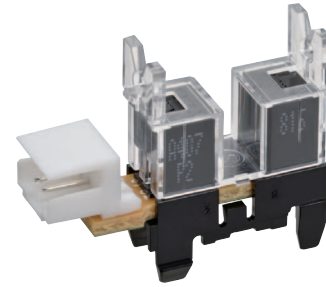


# Photomicrosensor (Actuator Mounted)

# EE-SA407-P2

## Actuator Mounted Connector Models

- Photo IC output (Light-ON)
- Snap-in mounted (Compatible thickness:  $t = 1, 1.2, 1.6$  mm)
- Compatible connector: CT connector manufactured by TE Connectivity
- Directly connectable to C-MOS

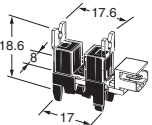


 Be sure to read *Safety Precautions* on Page 3.

RoHS Compliant

## Ordering Information

### Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H x W) (mm)	Output type	Model	Minimum packing unit (Unit: pcs)
	Transmissive (slot type)	Connector	3.6 mm (Slot width)	Both emitting side and detecting side 2.4 x 0.5	Photo IC	EE-SA407-P2 (Light-ON)	1

Note: Order in multiples of minimum packing unit.

## Ratings, Characteristics and Exterior Specifications

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Rated value	Unit
Power supply voltage	$V_{CC}$	7	V
Output voltage	$V_{OUT}$	28	V
Output current	$I_{OUT}$	16	mA
Permissible output dissipation	$P_{OUT}$	250 *	mW
Operating temperature	$T_{opr}$	-20 to 75	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to 85	$^\circ\text{C}$

\* Refer to the temperature rating chart if the ambient temperature exceeds  $25^\circ\text{C}$ .

### Exterior Specifications

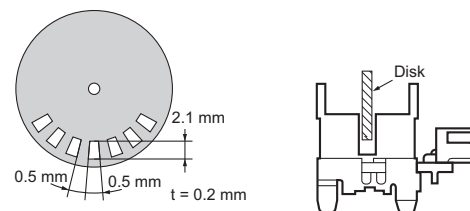
Connecting method	Weight (g)	Material	
		Case	Transparent cover
Connector	1.7	Polycarbonate	Polycarbonate

### Electrical and Optical Characteristics

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

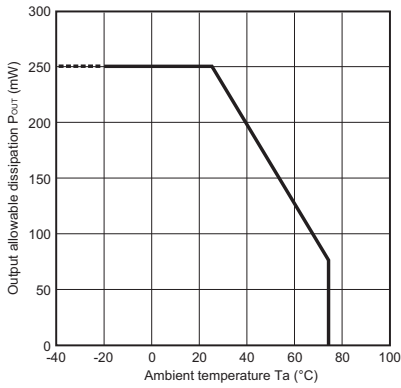
Item	Symbol	Value			Unit	Condition
		MIN.	TYP.	MAX.		
Current consumption	$I_{CC}$	—	—	30	mA	With and without incident
Low-level output voltage	$V_{OL}$	—	—	0.35	V	$I_{OUT} = 16$ mA, with incident
High-level output voltage	$V_{OH}$	$(V_{CC} \times 0.9)$	—	—	V	$V_{OUT} = V_{CC}$ , without incident $R_L = 47$ k $\Omega$
Response frequency	$f$	3	—	—	kHz	$V_{OUT} = V_{CC}$ * $R_L = 47$ k $\Omega$

\* The value of the response frequency is measured by rotating the disk as shown below.

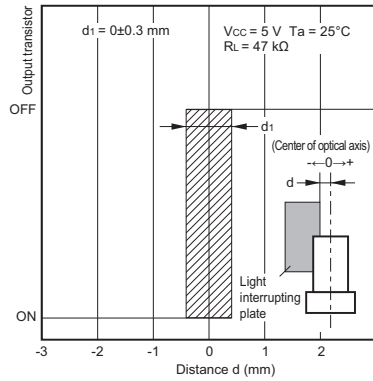


## Engineering Data (Reference Value)

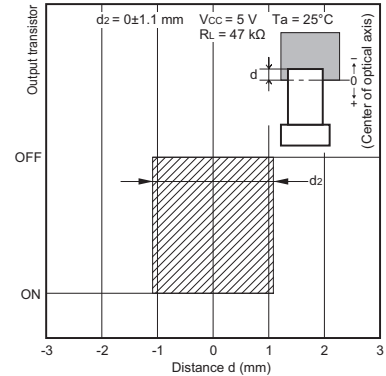
**Fig 1. Output Allowable Dissipation vs. Ambient Temperature Characteristics**



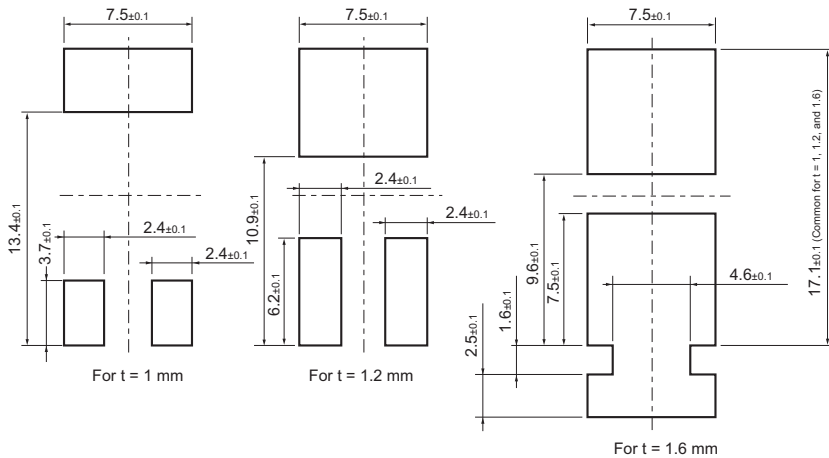
**Fig 2. Sensing Position Characteristics (Typical)**



**Fig 3. Sensing Position Characteristics (Typical)**

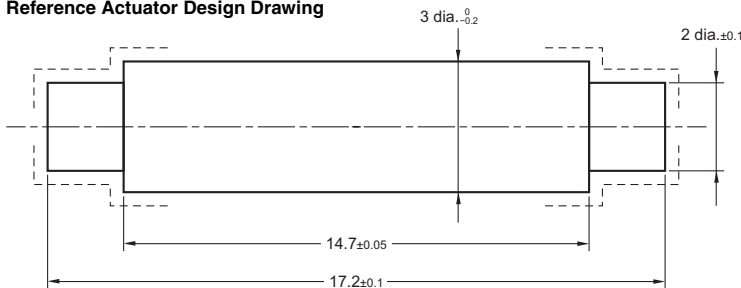


## Recommended Mounting Holes



- When mounting the Photomicrosensor to a panel with a hole opened by pressing, make sure that the hole has no burrs. The mounting strength of the Photomicrosensor will decrease if the hole has burrs.
- When mounting the Photomicrosensor to a panel with a hole opened by pressing, be sure to mount the Photomicrosensor on the pressing side of the panel.
- The mounting strength of the Photomicrosensor will increase if the Photomicrosensor is mounted to a panel with a hole that is only a little larger than the size of the Photomicrosensor, in which case, however, it will be difficult to mount the Photomicrosensor to the panel. The mounting strength of the Photomicrosensor will decrease if the Photomicrosensor is mounted to a panel with a hole that is comparatively larger than the size of the Photomicrosensor, in which case, however, it will be easy to mount the Photomicrosensor to the panel. When mounting the Photomicrosensor to a panel, open an appropriate hole for the Photomicrosensor according to the application.
- After mounting the Photomicrosensor to any panel, make sure that the Photomicrosensor does not wobble.

**Reference Actuator Design Drawing**



Note: 1. Make sure that the portions marked with dotted lines have no burrs.  
 2. The material of the actuator must be selected by considering the infrared permeability of the actuator.

## Safety Precautions

To ensure safe operation, be sure to read and follow the Instruction Manual provided with the Sensor.

### CAUTION

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



### Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings. Dispose of this product as industrial waste.

### Precautions for Safe Use

**Do not use the product with a voltage or current that exceeds the rated range.**

Applying a voltage or current that is higher than the rated range may result in explosion or fire.

**Do not miswire such as the polarity of the power supply voltage.**

Otherwise the product may be damaged or it may burn.

**Do not short-circuit the load.**

Otherwise explosion or burning may occur.

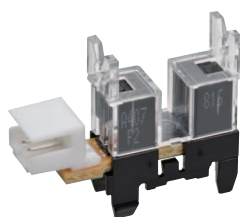
**This product does not resist water. Do not use the product in places where water or oil may be sprayed onto the product.**

## Dimensions and Internal Circuit

(Unit: mm)

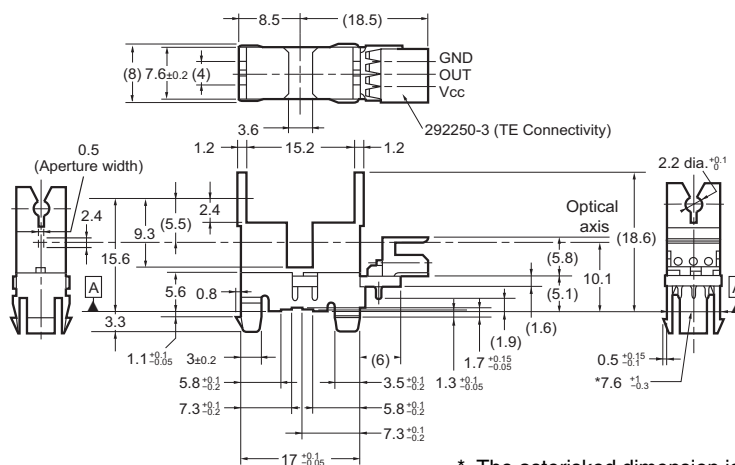
### Photomicrosensor

EE-SA407-P2



Aperture size (H x W)

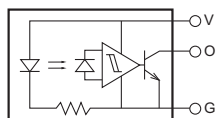
Emitter	Detector
2.4 x 0.5	2.4 x 0.5



\* The asterisked dimension is specified by datum A only.

Recommended compatible connector: Connector manufactured by TE Connectivity  
 179228-3 (crimp type)  
 175778-3 (crimp type)  
 173997-3 (insulation displacement crimp type)

Internal circuit



Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

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