

Interruptor-Type Photosensors

A-27-17

OS-3705/3705R • Snap-in and open-collector output type

OS-3705 ON when not interrupted.
OS-3705R OFF when not interrupted.

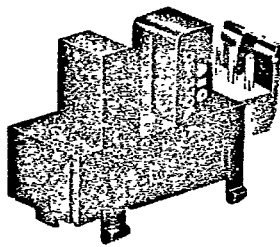
The OS-3705 and OS-3705R are high-performance interruptor-type photosensors that use GaAs infrared light-emitting diodes and opto-electronic integrated receiving circuits, with the amplifier and Schmitt trigger circuit integrated onto a single chip. They have snap-in mountings and deliver open-collector output.

● **Features**

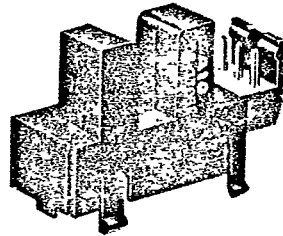
- By unitizing the light-receiving element and surrounding

signal processing circuitry, both a reduction in parts count and design simplicity have been achieved.

- Open-collector output.
- Quick snap-in type mounting.
- Can be mounted on surfaces 1mm to 1.2mm thick.
- **Applications**
- Timing position detection for rotating machinery such as copiers and printers.
- An actuator or other device can be added for moving detection of paper, wafer, and other light weight objects.
- Photoelectric switches, counters and encoders.



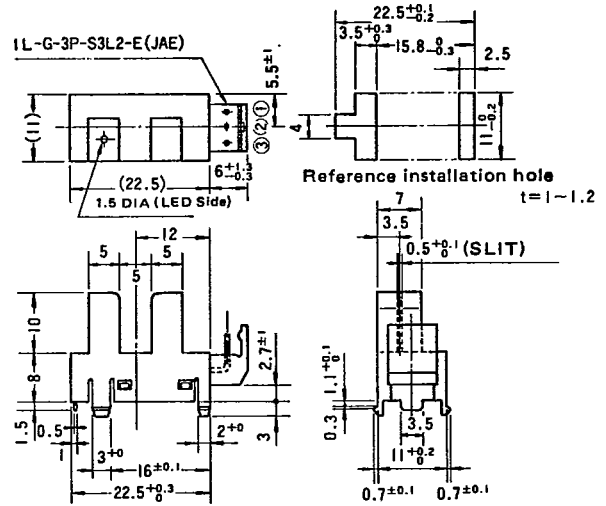
OS-3705



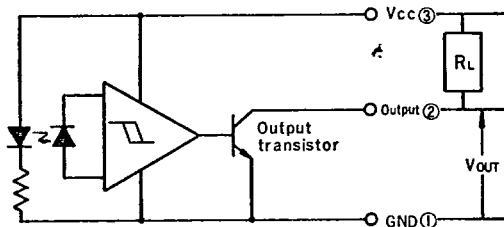
OS-3705R

OS-3705/OS-3705R

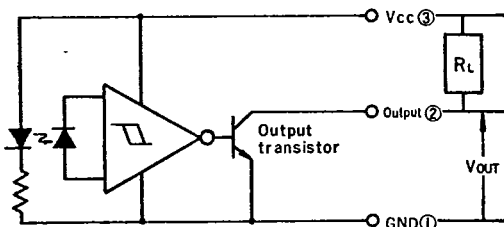
UNITS: MILLIMETER



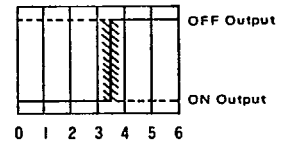
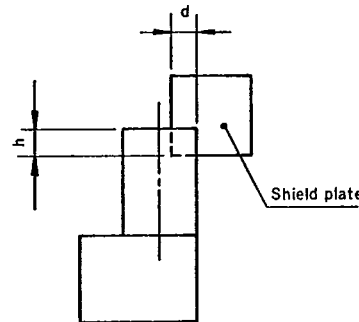
● **Connection Diagram OS-3705**



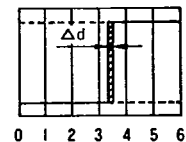
● **Connection Diagram OS-3705R**



● **Sensing distance characteristics and repeated sensing distance characteristics (Ta=25°C, Vcc=5V±10%)**



Distance d(mm) $d = 3.5 \pm 0.3$ mm
Sensing distance characteristics
(Distance of shield plate)



$\Delta d: \pm 0.35$ mm MAX.
Repetition side-sensing distance characteristics
(Inside parts, every single direction)

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● **Absolute Maximum Ratings** (Ta = 25°C)

Parameter	Symbol	Value	Note
Supply voltage	V _{CC}	7V	
Output voltage	V _{OUT}	28V	Between Collector-Emitter
Output current	I _{OUT}	50mA	Transistor collector current
Output power dissipation	P _{OUT}	150mW	Collector power dissipation

● **Electrical Characteristics** (Ta = 25°C, V_{CC} = 5V±10%)

Photo path	OS-3705			OS-3705R			Test conditions
	Parameter	Symbol	Limits	Parameter	Symbol	Limits	
Open	Current consumption	I _{CC}	Max30mA	Current consumption	I _{CC}	Max30mA	(20mA TYP)
	ON Voltage	V _{OUT(Sat)}	Max0.35V	OFF Voltage	V _{OUT}	Min(V _{CC} × 0.9)	I _{OUT} = 16mA
Blocked	Current consumption	I _{CC}	Max30mA	Current consumption	I _{CC}	Max30mA	(20mA TYP)
	OFF Voltage	V _{OUT}	Min(V _{CC} × 0.9)	ON Voltage	V _{OUT(Sat)}	Max0.35V	R _L = 47KΩ
Response frequency	3000Hz						R _L = 47KΩ
Output	Open collector						

● **Mechanical Characteristics**

Parameter	Limits
Resistance to shock	30G
Resistance to vibration	Vibration frequency of 10~55Hz with a peak-to-peak, amplitude of 1.5mm, 60 sec. X, Y, Z 3 directions per 30 min.
Operating temperature range (T _{opr})	-20°C ~ +85°C
Storage temperature range (T _{stg})	-30°C ~ +100°C