

Interruptor-Type Photosensors

A-27-17

OS-3701/3701R • Screw mounting and open-collector output type

OS-3701 ON when not interrupted.

OS-3701R OFF when not interrupted.

The OS-3701 and OS-3701R 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 screw mountings and deliver an 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.

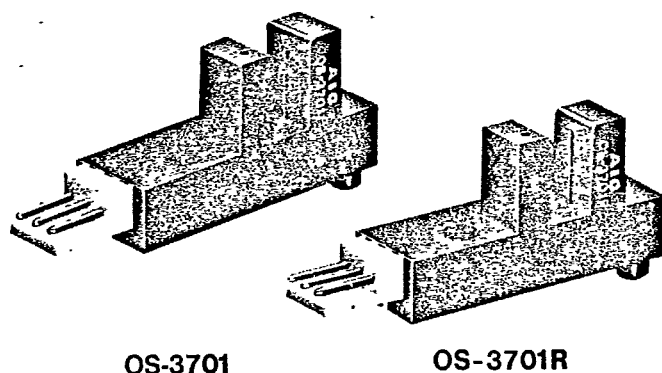
- Open-collector output.
- Interchangeable connectors.
- Mounted by a single screw.

● 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.

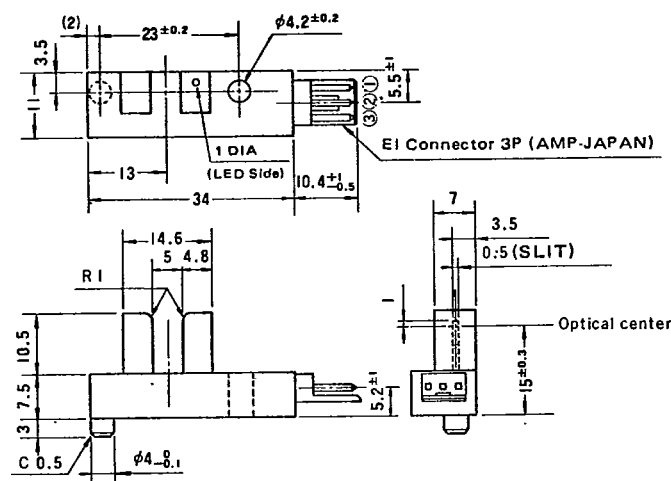
OS-3701/OS-3701R

UNITS: MILLIMETER

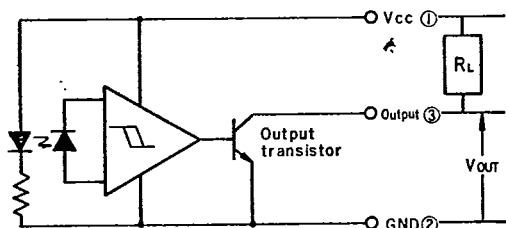


OS-3701

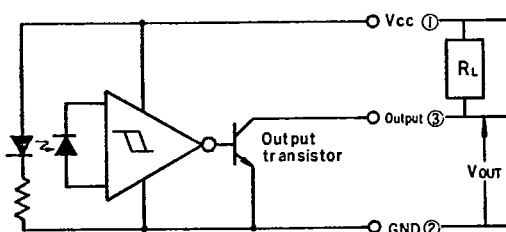
OS-3701R



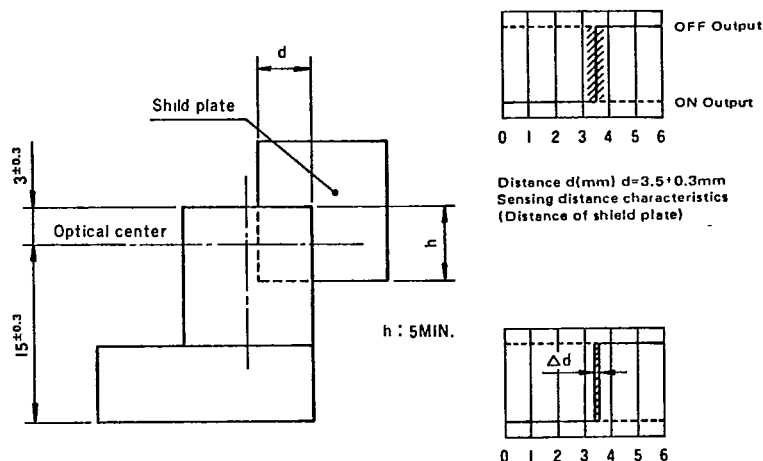
● Connection Diagram OS-3701



● Connection Diagram OS-3701R



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



Δd: ±0.35mm MAX.
Repetition side-sensing distance characteristics
(Inside parts, every single direction)
Dotted-line indicate OS-3701R

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

Parameter	Symbol	Value	Note
Supply voltage	V_{CC}	10V	
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 ($T_a = 25^\circ\text{C}$, $V_{CC} = 5V \pm 10\%$)

Photo path	OS-3701			OS-3701R			Test conditions
	Parameter	Symbol	Limits	Parameter	Symbol	Limits	
Open	Current consumption	I_{CC}	Max30mA	Current consumption	I_{CC}	Max30mA	(20mA TYP)
	ON Voltage	$V_{OUT}(\text{Sat})$	Max0.35V	OFF Voltage	V_{OUT}	Min($V_{CC} \times 0.9$)	$I_{OUT} = 16\text{mA}$
Blocked	Current consumption	I_{CC}	Max30mA	Current consumption	I_{CC}	Max30mA	(20mA TYP)
	OFF Voltage	V_{OUT}	Min($V_{CC} \times 0.9$)	ON Voltage	$V_{OUT}(\text{Sat})$	Max0.35V	$R_L = 47K\Omega$
Response frequency	3000Hz						$R_L = 47K\Omega$
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})	$-20^\circ\text{C} \sim +85^\circ\text{C}$
Storage temperature range (T_{stg})	$-30^\circ\text{C} \sim +100^\circ\text{C}$