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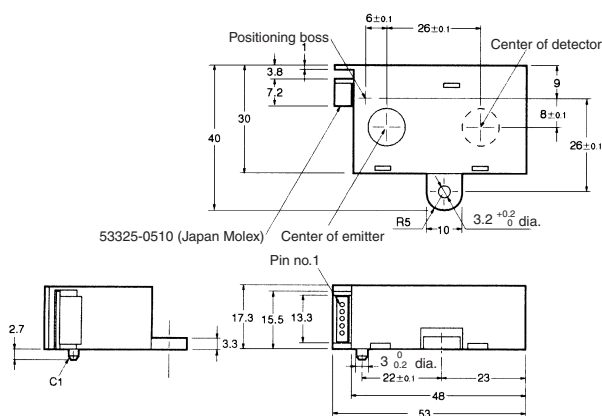
For any questions, you can email us directly:

sales@integrated-circuit.com

Multiple Beam Sensor (3 Beams: 50 mm) EY3A-3051

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



| Pin no. | Remarks | Name |
|---------|---------|--------------------|
| 1 | O1 | Output 1 (OUT 1) |
| 2 | O2 | Output 2 (OUT 2) |
| 3 | O3 | Output 3 (OUT 3) |
| 4 | V | Power supply (Vcc) |
| 5 | 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 |
| 30 < mm 50 | ±0.8 |
| 50 < mm 80 | ±0.95 |

Recommended Mating Connectors:
 Japan Molex 51090-0500 (crimp connector)
 52484-0510 (press-fit connector)

■ Features

- Simultaneously senses three objects positioned differently, thus saving space.
- Ensures higher sensitivity and external light interference resistivity than any other photomicrosensor.
- Narrow sensing range ensures stable sensing of a variety of sensing objects.

■ Application Examples

Sensing of paper sizes.

■ Absolute Maximum Ratings (Ta = 25° C)

| Item | Symbol | Rated value |
|----------------------|------------------|----------------------------------|
| Power supply voltage | V _{CC} | 7 V |
| Load voltage | V _{OUT} | 7 V |
| Load current | I _{OUT} | 10 mA |
| Ambient temperature | Operating | T _{opr} 0° C to 65° C |
| | Storage | T _{stg} -15° C to 70° C |

Note: Make sure there is no icing or condensation when operating the Sensor.

■ Ordering Information

| Description | Model |
|----------------------|-----------|
| Multiple beam sensor | EY3A-3051 |

■ Electrical and Optical Characteristics (Ta = 0° C to 65° C)

| Item | Value | Condition |
|-----------------------------------|-------------|--|
| Power supply voltage | 5 V ±5% | --- |
| Current consumption | 50 mA max. | V _{CC} = 5 V, R _L = |
| Peak current consumption | 300 mA max. | V _{CC} = 5 V, R _L = |
| Low-level output voltage | 0.6 V max. | V _{CC} = 5 V, I _{OL} = 4 mA (see note 1) |
| High-level output voltage | 3.5 V min. | V _{CC} = 5 V, R _L = 4.7 k (see note 2) |
| Response delay time (high to low) | 35 ms max. | The time required for the output to become "Lo" after placing sensing object. |
| Response delay time (low to high) | 20 ms max. | The time required for the output to become "Hi" after removing sensing object. |

- Note: 1. These conditions are for the sensing of lusterless paper with an OD of 0.8 maximum located at the correct sensing position of the Sensor as shown in the optical path arrangement on the next page.
 2. These conditions are for the sensing of the paper supporting plate with an OD of 0.05 located using the glass plate without paper as shown in the optical path arrangement on the next page.

**■ Characteristics (Paper Table Glass: t = 6 mm max., Transparency Rate: 90% min.)
 (Ta = 0° C to 65° C)**

| Item | Characteristic value |
|-------------------------------|--|
| Sensing density | Lusterless paper with an OD of 0.8 max. (sensing distance: 50 mm) (see note) |
| Non-sensing distance | 80 mm (from the top of the sensor), OD: 0.05 |
| Paper sensing distance | 50 mm (from the top of the sensor) |
| Ambient illumination | Sunlight: 3,000 lx max., fluorescent light: 2,000 lx max. |

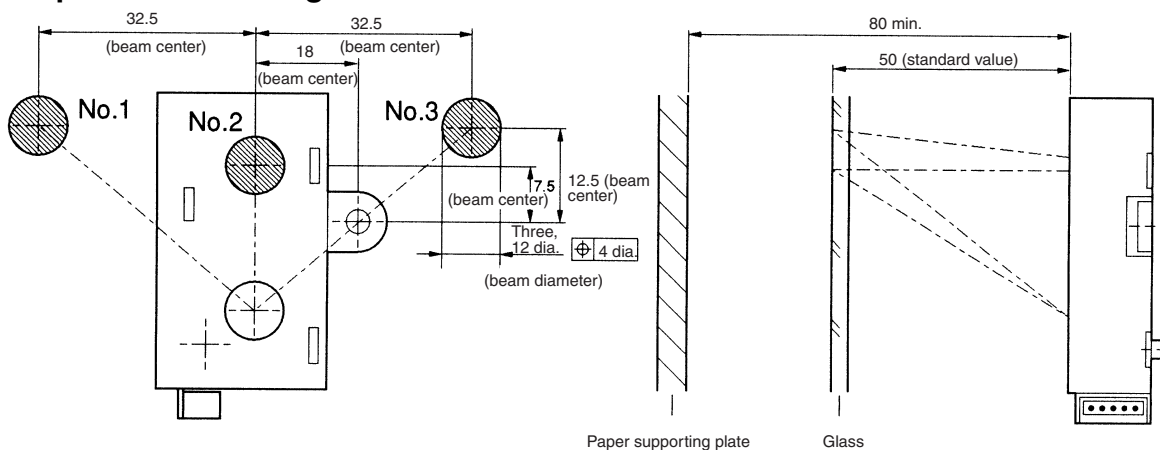
- Note:** 1. The data shown are initial data.
 2. Optical darkness (OD) is defined by the following formula:

$$OD = \log_{10} \left(\frac{P_{OUT}}{P_{IN}} \right)$$

P_{IN} (mW): Light power incident upon the document

P_{OUT} (mW): Reflected light power from the document

■ Optical Path Arrangement



■ Engineering Data

Distance Characteristics (Estimated Lower-limit Value)

