# KUA0055A

Reflector Sensor

## Features

| | |
|---|---|
| Function | Reflector Sensor for Short Distance (Digital Output) |
| Product features | ・ Outer Dimension : 23.7 x 9.3 x 11.4 mm (L x W x H)<br>・ Supply Voltage (Vcc) = 5V<br>(Supply Voltage (Vcc) = 3V is available.)<br>・ Integrated IRED and Photo IC<br>・Compact Small Package<br>・Detection Distance : 1 mm～7.5 mm<br>・ RoHS compliant |
| Installation method | Snap On and Connector |
| Packing | Tray |

## Recommended Applications

Copier, Printer (Detection of Paper Jam, Paper Loading Timing and Paper Size)

## Absolute Maximum Ratings

(Ta=25℃, Except Topr, Tstg, Hopr and Hstg)

| Item | Conditions | Symbol | Absolute Maximum Rating | Unit |
|---|---|---|---|---|
| Supply Voltage | | Vcc | -0.5 ～ 7 | V |
| Output Voltage | | Vout | 12 | V |
| Output Current | | Io | 50 | mA |
| Operating Temperature | | $T_{opr}$ | -10～+85 | ℃ |
| Storage Temperature | | $T_{stg}$ | -40～+85 | ℃ |
| Operating Humidity | No Dew | $H_{opr}$ | 15～+95 | % |
| Storage Humidity | No Dew | $H_{stg}$ | 15～+95 | % |
| Acceptable Ambient Illuminate | Under Fluorescent Lamps and Incandescent Lamps | Ex | 3,000 | lx |

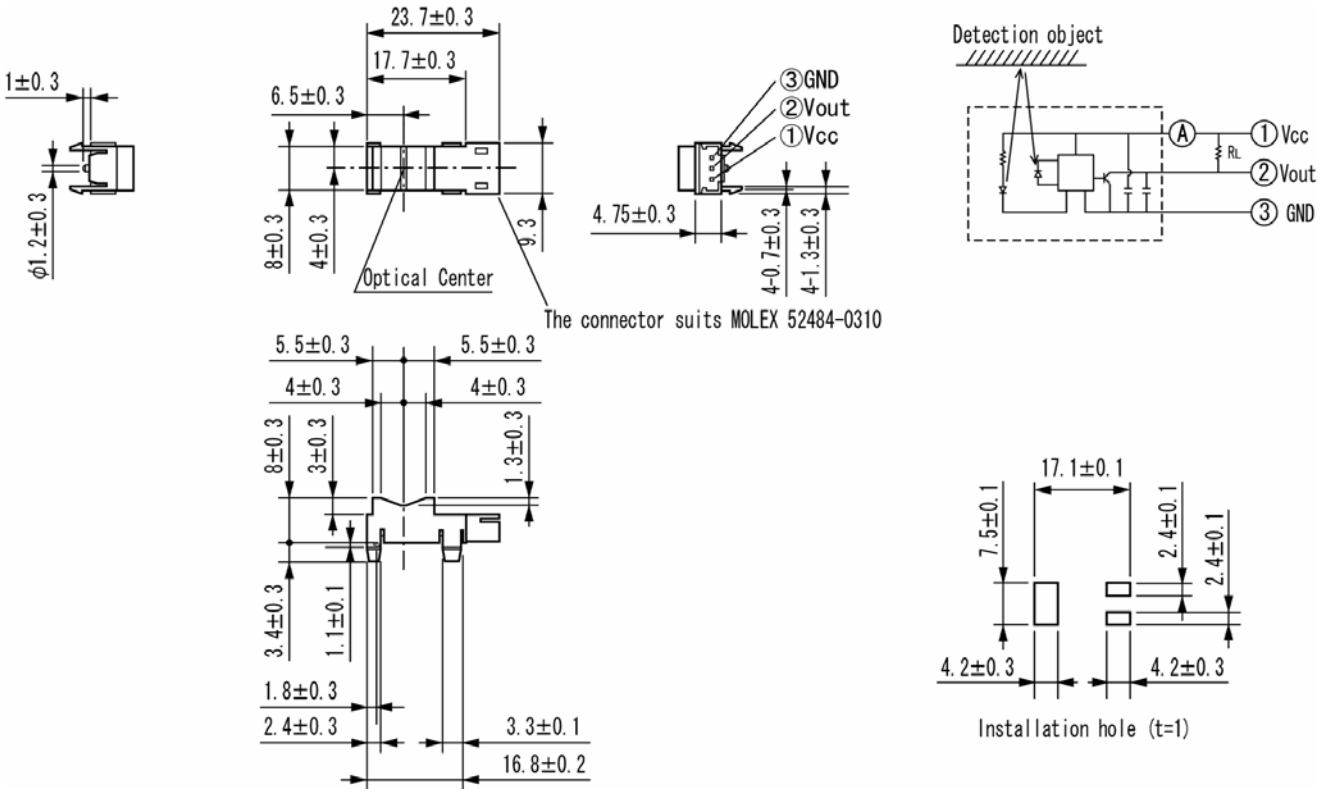
## Electro-Optical Characteristics

(Ta=25℃, Vcc=5V, $R_L$=1kΩ, Ambient Brightness=0lx)

| Item | Conditions | Symbol | Characteristics | | Unit |
|---|---|---|---|---|---|
| Current Consumption | Average | Icc | MAX. | 20 | mA |
| | Peak | | MAX. | 150 | |
| High Level Output Voltage | | $V_{OH}$ | MIN. | 4.5 | V |
| Low Level Output Voltage | (At the time of Detecting) Transistor On | $V_{OL}$ | MAX. | 0.4 | V |
| Output | Open Collector | Vout | (At the time of Detecting) Transistor On | | - |
| Response Time | Rise Time/Fall Time | tr/tf | MAX. | 1 | ms |
| Detection Distance | Kodak 90% reflective paper Tracing paper OHP Regular paper | $L_{HL}$ | MIN. | 1.0 | mm |
| | | | MAX. | 7.5 | |
| | Black paper | $L_{HL}$ | MIN. | 3.0 | mm |
| | | | MAX. | 7.0 | |
| Undetectable Distance | 90% Reflective Paper (White Paper) | $L_{LH}$ | MIN. | 27 | mm |
| Detection Accuracy | Detection Distance : 6 mm X1 | - | - | 1.5±0.5 | mm |
| | Detection Distance : 6 mm X2 | - | - | 1.5±0.5 | |
| Detection Range | From Ootical Center | - | MAX. | ϕ 10 | mm |

## Package Dimensions

(Unit: mm)



## Reliability Testing Result

| Reliability Testing Result | Applicable Standard | Testing Conditions | Duration | Failure |
|---|---|---|---|---|
| Wet High Temp. Operaing Life | EIAJ ED-4701/100(102) | Ta = 85℃, RH = 85%, $V_{CC}$ = 5V | 1,000 h | 0/5 |
| Wet High Temp. Storage Life | EIAJ ED-4701/100(103) | Ta = 85℃, 95% | 1,000 h | 0/5 |
| High Temp. Operating Life | EIAJ ED-4701/100(101) | Ta = 85℃, $V_{CC}$ = 5V | 1,000 h | 0/5 |
| Low Temp. Operating Life | EIAJ ED-4701/100(101) | Ta = -10℃, $V_{CC}$ = 5V | 1,000 h | 0/5 |
| Thermal Shock | EIAJ ED-4701/200/(203) | -40℃ ～ 85℃ | 200 cycles | 0/5 |
| Vibration, Variable Frequency | EIAJ ED-4701/400(403) | 9.8m/s$^2$ (1G), 10 ～ 55 ～ 10Hz sweep for 60s, XYZ each direction(State of packing) | 30min | 0/3 |
| Shock | EIAJ ED-4701/400(404) | 294m/s$^2$ (30G), XYZ each direction (State of packing) | 3 times | 0/3 |
| Terminal Strength | EIAJ ED-4701/400(401) | Pull : 20N 5s<br>Bend : 10N 5s | - | 0/Each 5 |
| Electric Static Discharge (ESD) | EIAJ ED-4701/300(304) | C = 100pF, R = 1.5KΩ, ±1KV | once each terminal | 0/3 |

## Failure Criteria

| Items | Failure criteria |
|---|---|
| Electro Characteristics | The Rated Values of Electro Characteristics is satisfied. |
| Cosmetic Appearance | Occurrence of notable decoloration, deformation and cracking |

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