

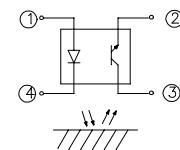
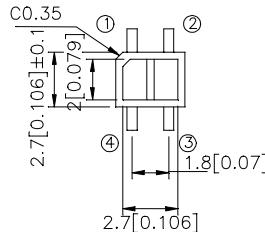
SUBMINIATURE, HIGH SENSITIVITY PHOTointERRUPTER

*Features

Compact and thin.

Visible light cut-off type.

High sensitivity.

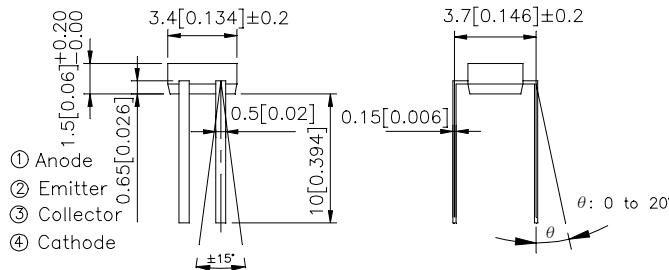


*Applications

Cassette tape recorders, VCRs.

Floppy disk drives.

Various microcomputerized control equipment.



UNIT : MM[INCH]

TOLERANCE : ± 0.25[±0.01] UNLESS OTHERWISE NOTED.

*Absolute Maximum Ratings(Ta=25 °C)

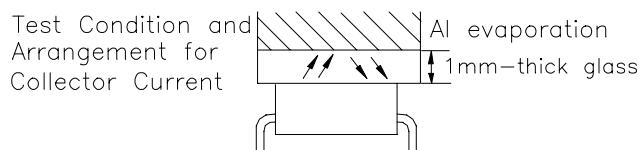
| Parameter | | Symbol | Rating | Unit |
|--|-----------------------------|------------------|----------|------|
| Input | Forward Current | I _F | 50 | mA |
| | Reverse voltage | V _R | 6 | V |
| | Power dissipation | P | 75 | mW |
| Output | Collector power dissipation | P _c | 75 | mW |
| | Collector current | I _c | 20 | mA |
| | Collector-emitter voltage | V _{CEO} | 35 | V |
| | Emitter-collector voltage | V _{ECD} | 6 | V |
| Operating temperature | | T _{opr} | -25~+85 | ° C |
| Storage temperature | | T _{stg} | -40~+100 | ° C |
| Soldering temperature (1/16 inch from body for 5 seconds) | | T _{sol} | 260 | ° C |

■Electro-optical Characteristics

| Parameter | | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|--------------------------|----------------------------------|------------|--|------|-----------|-----------|------|
| Input | Forward voltage | V_F | $I_F=20\text{mA}$ | 1.0 | 1.2 | 1.4 | V |
| | Reverse current | I_R | $V_R=6\text{V}$ | — | — | 10 | mA |
| Output | Collector dark current | I_{CEO} | $V_{CE}=20\text{V}$ | — | 10^{-9} | 10^{-7} | A |
| Transfer characteristics | * ¹ Collector Current | I_c | $V_{CE}=2\text{V}, I_F=4\text{mA}$ | 10 | — | 400 | mA |
| | * ² Leak Current | I_{LEAK} | $V_{CE}=2\text{V}, I_F=4\text{mA}$ | — | — | 0.1 | V |
| | Rise time | t_r | $V_{CE}=2\text{V}, I_c=100\mu\text{A}$ $R_L=1\text{kW}, d=1\text{mm}$ | — | 20 | 100 | mSec |
| | | t_f | | — | 20 | 100 | mSec |

*1 The condition and arrangement of the reflective object are shown below.

*2 Without reflective object.



■Classification table of radiant flux

| Rank mark | BIN1 | BIN2 | BIN3 | BIN4 | BIN5 | BIN6 |
|--------------------|-------|-------|-------|--------|---------|---------|
| $I_c(\mu\text{A})$ | 10~30 | 31~60 | 61~90 | 91~125 | 126~200 | 201~400 |

Fig. 1 Forward Current vs. Forward Voltage

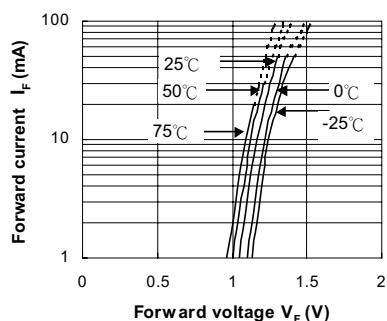


Fig. 2 Collector Current vs. Forward Current

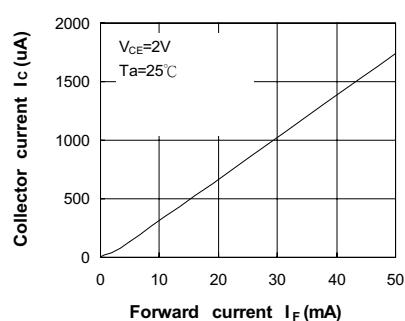


Fig. 3 Collector Current vs. Collector-emitter Voltage

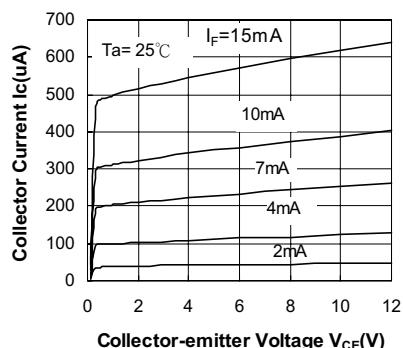


Fig. 4 Relative Collector Current vs. Ambient Temperature

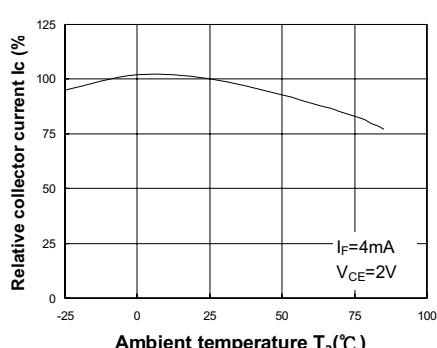
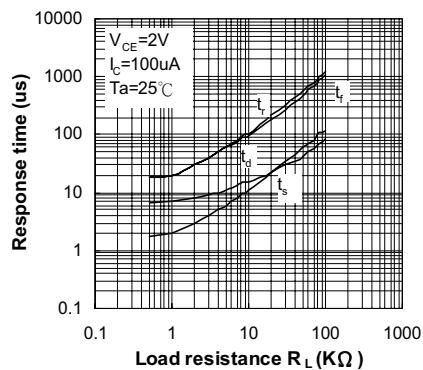


Fig. 5 Response Time vs.
Load Resistance



Test Circuit for Response Time

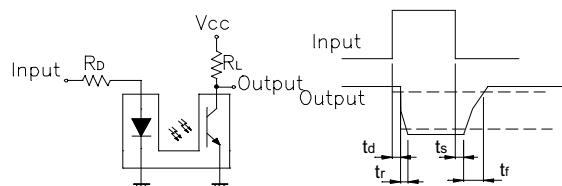


Fig. 6 Collector Dark Current vs.
Ambient Temperature

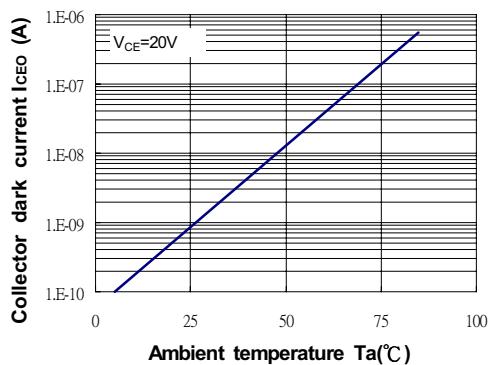


Fig. 7 Relative Collector Current vs.
Distance between Sensor and
Al Evaporation Glass

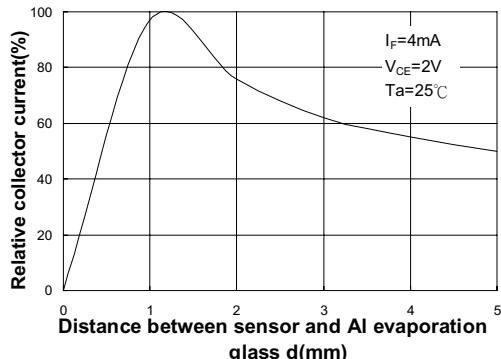
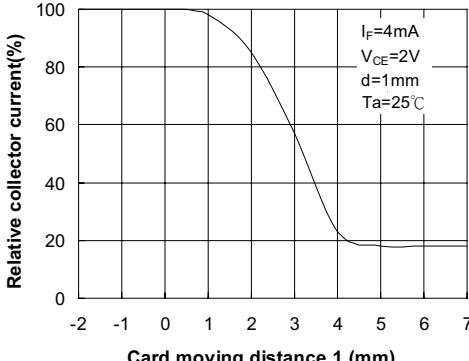
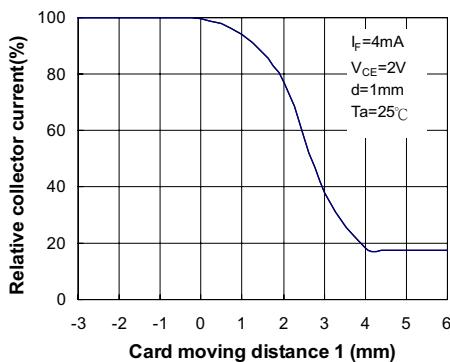
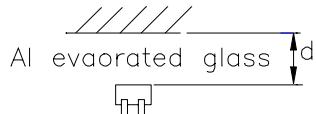


Fig. 8 Relative Collector Current vs.
Card Moving Distance (1)



Test Condition for Distance & Detecting Position Characteristics

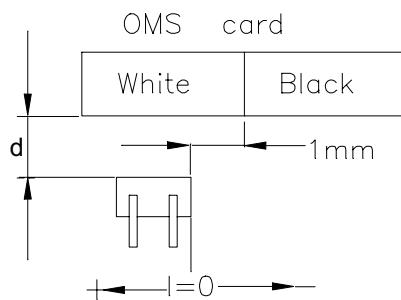
Correpond to Fig. 7



Correpond to Fig. 8

Test condition

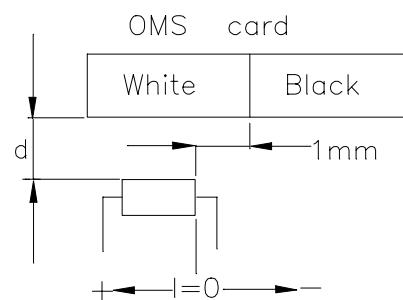
$$\begin{aligned}I_F &= 4\text{mA} \\V_{CE} &= 2\text{V} \\d &= 1\text{mm}\end{aligned}$$



Correpond to Fig. 9

Test condition

$$\begin{aligned}I_F &= 4\text{mA} \\V_{CE} &= 2\text{V} \\d &= 1\text{mm}\end{aligned}$$



Reflow Soldering Profile

