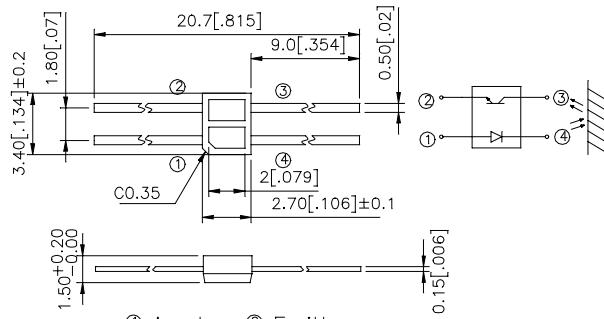


## SUBMINIATURE, HIGH SENSITIVITY PHOTointERRUPTER

### \*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 )

Item		Symbol	Rating	Unit
Input	Forward Current	I <sub>F</sub>	50	mA
	Reverse Voltage	V <sub>R</sub>	6	V
	Power Dissipation	P <sub>d</sub>	75	mW
Output	Collector-Emitter Voltage	V <sub>CEO</sub>	35	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	6	V
	Collector Current	I <sub>C</sub>	20	mA
	Collector Power Dissipation	P <sub>C</sub>	75	mW
Operating Temperature		T <sub>opr</sub>	-40~+85	° C
Storage Temperature		T <sub>stg</sub>	-40~+100	° C
Lead Soldering Temperature (1/16 inch from body for 5 seconds)		T <sub>sol</sub>	260	° C

## ■Electro-optical Characteristics(Ta=25°C)

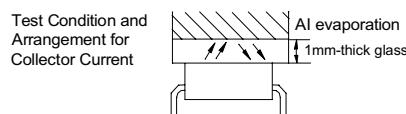
Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage	$V_F$	$I_F=20\text{mA}$	1.0V	1.2	1.4	V
	Reverse current	$I_R$	$V_R=6\text{V}$	—	—	10	$\mu\text{A}$
Output	Collector dark current	$I_{CEO}$	$V_{CE}=20\text{V}$	—	$10^{-9}$	$10^{-7}$	A
Transfer characteristics	* <sup>1</sup> Collector current	$I_C$	$V_{CE}=2\text{V}, I_F=4\text{mA}$	10	—	400	$\mu\text{A}$
	* <sup>2</sup> Leak current	$I_{LEAK}$	$V_{CE}=2\text{V}, I_F=4\text{mA}$	—	—	0.1	$\mu\text{A}$
	Response time	$t_R$	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$	—	20	100	$\mu\text{sec}$
	Fall time	$t_F$	$R_L=1\text{K}\Omega, d=1\text{mm}$	—	20	100	$\mu\text{sec}$

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

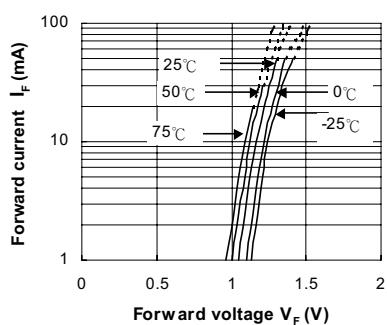
\*2 Without reflective object

## ■Classification table of radiant flux

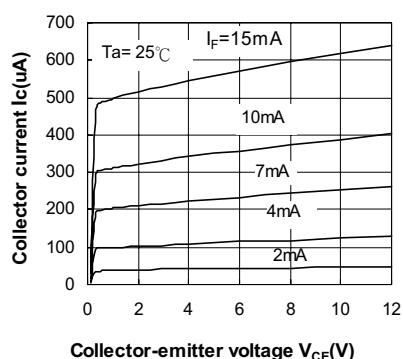
Rank mark	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6
$I_C(\mu\text{A})$	10~30	31~60	61~90	91~125	126~200	201~400



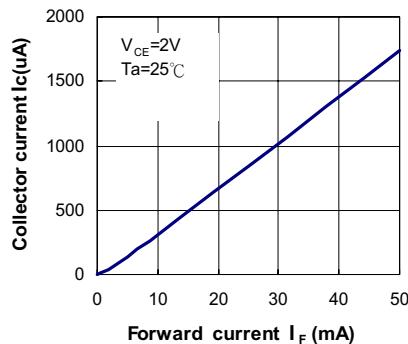
**Fig.1 Forward Current vs. Forward Voltage**



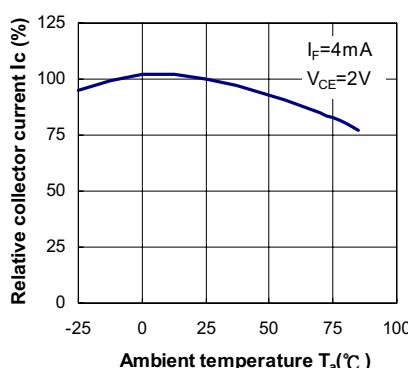
**Fig.3 Collector Current vs. Collector-emitter Voltage**



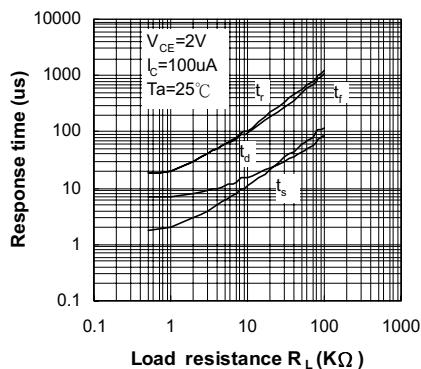
**Fig.2 Collector Current vs. Forward Current**



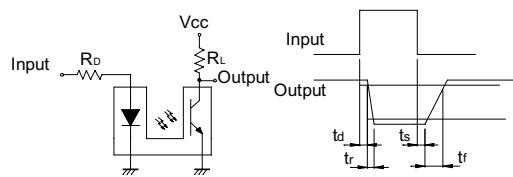
**Fig.4 Relative Collector Current vs. Ambient Temperature**



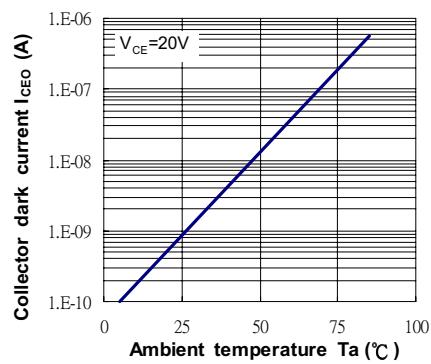
**Fig.5 Response Time vs. Load Resistance**



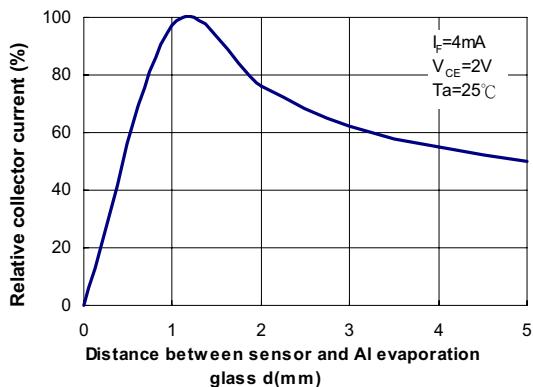
**Test Circuit for Response Time**



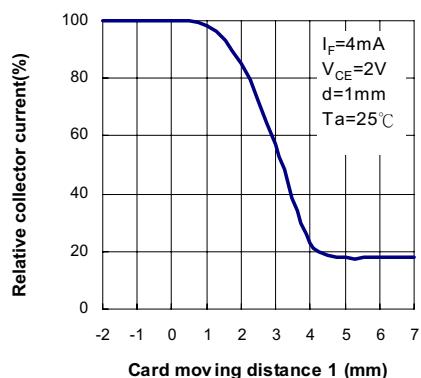
**Fig.6 Collector Dark Current vs. Ambient Temperature**



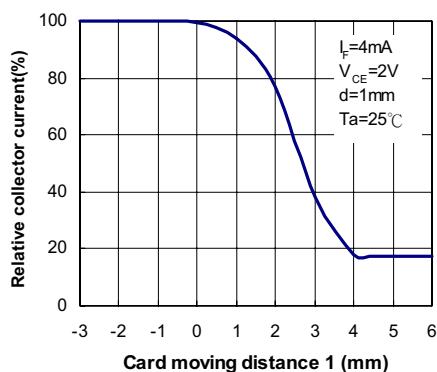
**Fig.7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass**



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

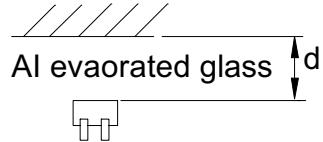


**Fig.9 Relative Collector Current vs. Card Moving Distance(2)**



## Test Condition for Distance & Detecting Position Characteristics

Correspond to Fig. 7



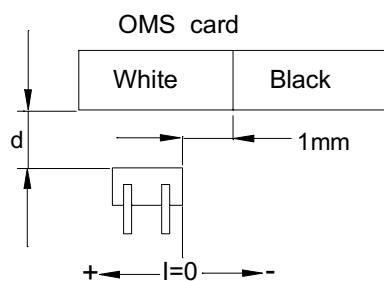
Correspond to Fig. 8

Test condition

$$I_F = 4\text{mA}$$

$$V_{CE} = 2\text{V}$$

$$d = 1\text{mm}$$



Correspond to Fig. 9

Test condition

$$I_F = 4\text{mA}$$

$$V_{CE} = 2\text{V}$$

$$d = 1\text{mm}$$

