

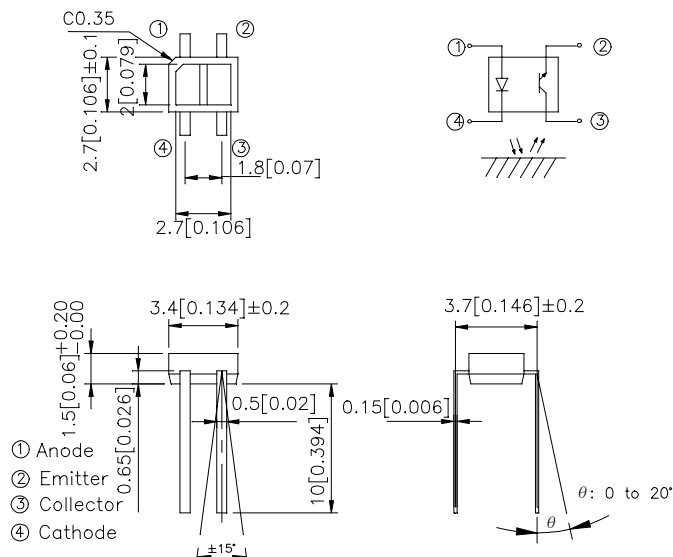
## SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

### \*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 :  $\pm 0.25$  [ $\pm 0.01$ ] UNLESS OTHERWISE NOTED.

### \*Absolute Maximum Ratings(Ta=25 °C)

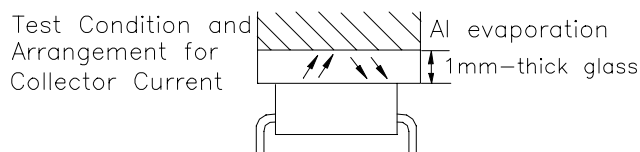
Parameter		Symbol	Rating	Unit
Input	Forward Current	$I_F$	50	mA
	Reverse voltage	$V_R$	6	V
	Power dissipation	P	75	mW
Output	Collector power dissipation	$P_C$	75	mW
	Collector current	$I_C$	20	mA
	Collector-emitter voltage	$V_{CEO}$	35	V
	Emitter-collector voltage	$V_{ECO}$	6	V
Operating temperature		$T_{opr}$	-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
	Response time	Rise time	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$ $R_L=1\text{KW}, d=1\text{mm}$	—	20	100	mSec
		Fall time		—	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

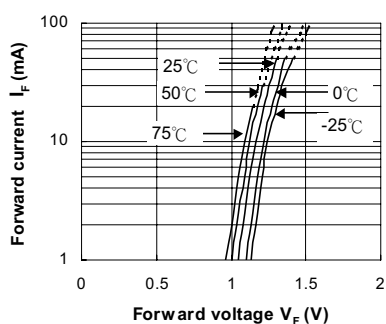


Fig. 2 Collector Current vs. Forward Current

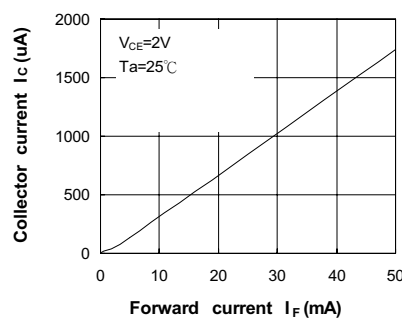


Fig. 3 Collector Current vs. Collector-emitter Voltage

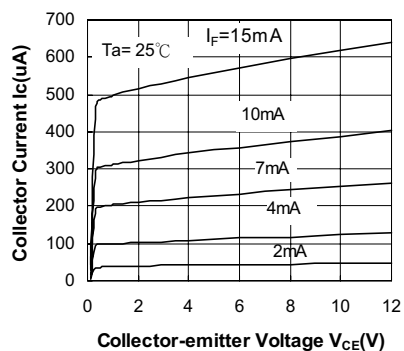


Fig. 4 Relative Collector Current vs. Ambient Temperature

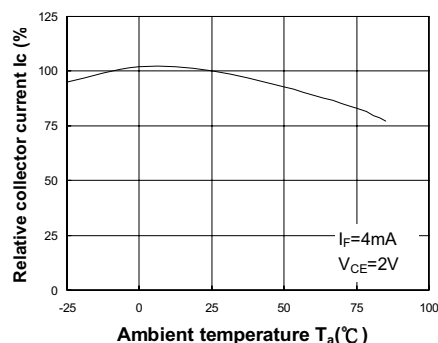
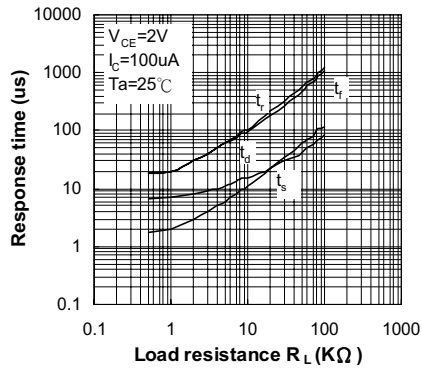


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

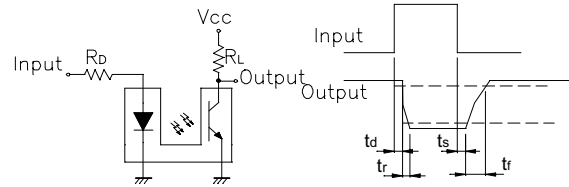


Fig. 6 Collector Dark Current vs. Ambient Temperature

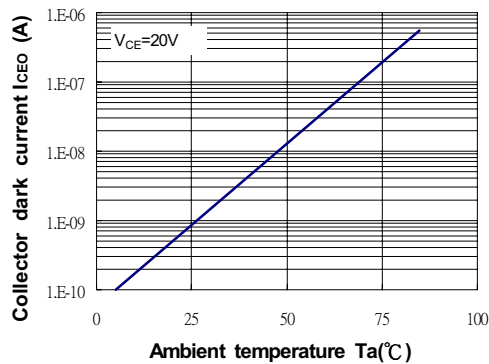


Fig. 7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

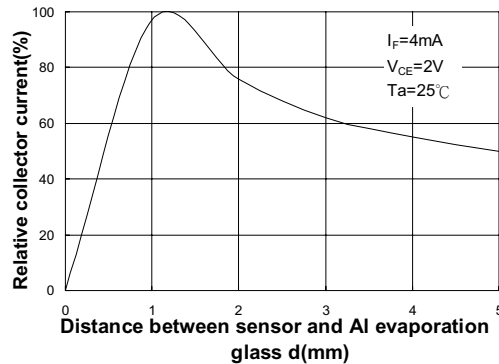


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

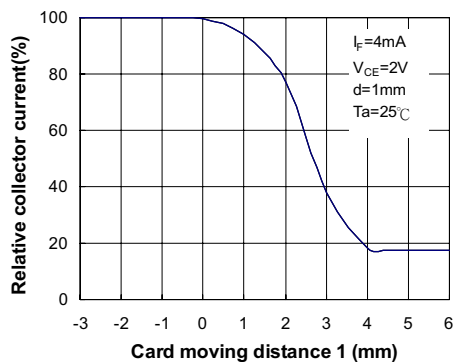
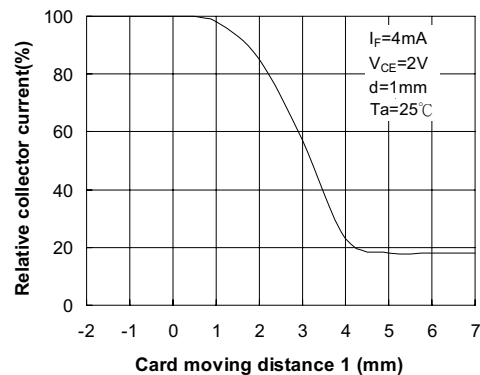
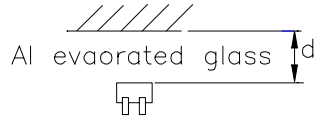


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



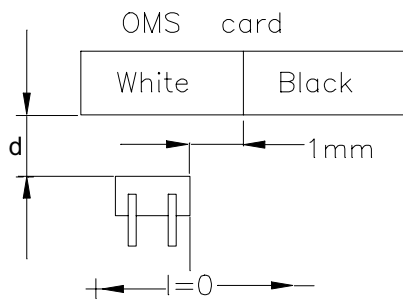
## Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7



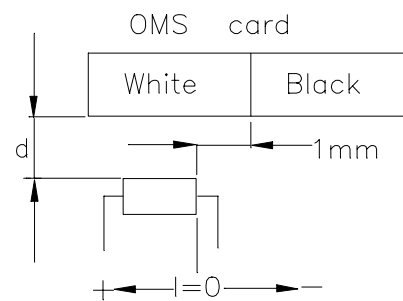
Correpond to Fig. 8  
Test condition

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



Correpond to Fig. 9  
Test condition

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



## Reflow Soldering Profile

