

SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

*Features

Compact and thin.

Visible light cut-off type.

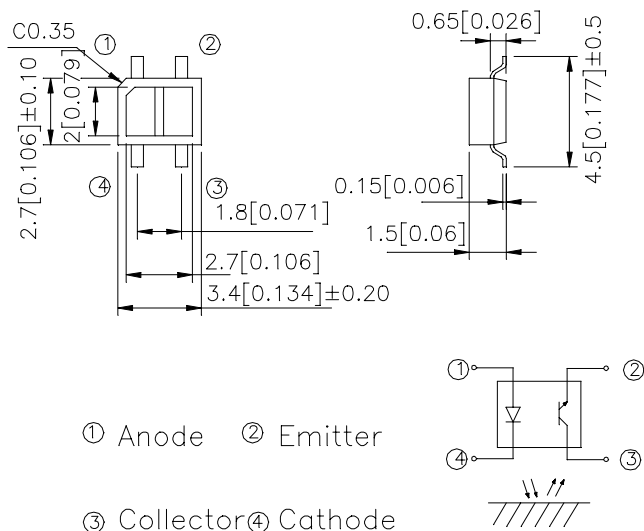
High sensitivity.

*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

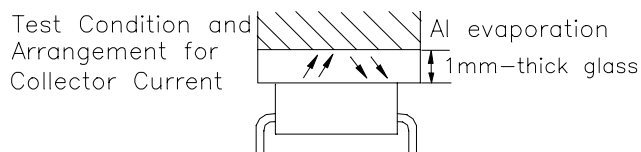
Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Collector power dissipation	P_C	75	mW
	Collector current	I_C	20	mA
	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
Operating temperature		T_{opr}	-25~+85	°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	μA
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	μA
	*2 Leak Current	I_{LEAK}	$V_{CE}=2\text{V}, I_F=4\text{mA}$	—	—	0.1	μA
	Response time	Rise time	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$ $R_L=1\text{K}\Omega, d=1\text{mm}$	—	20	100	μSec
		Fall time		—	20	100	μSec

*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

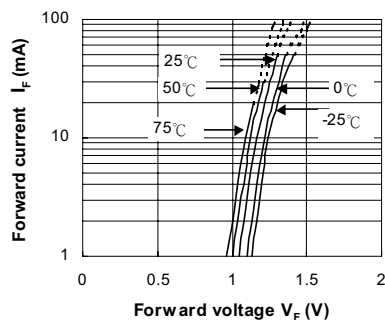


Fig. 2 Collector Current vs. Forward Current

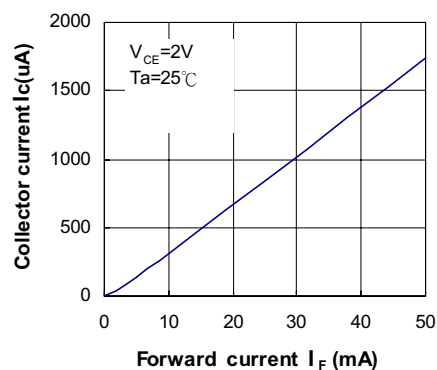


Fig. 3 Collector Current vs. Collector-emitter Voltage

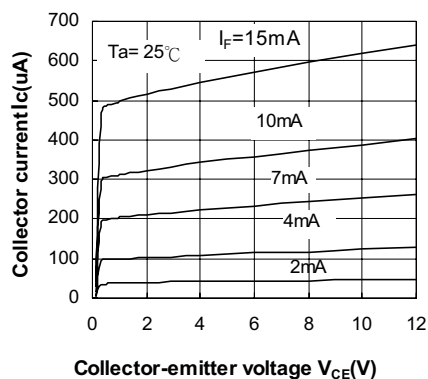


Fig. 4 Relative Collector Current vs. Ambient Temperature

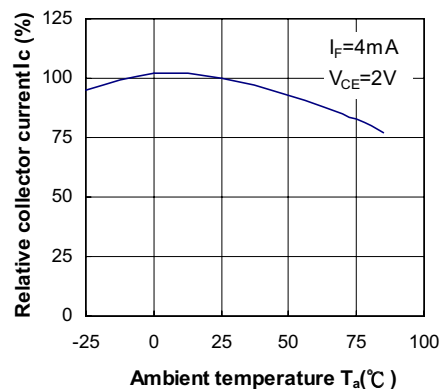
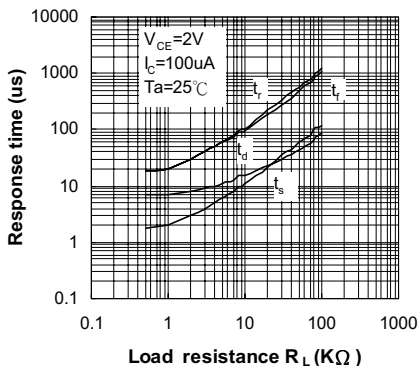


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

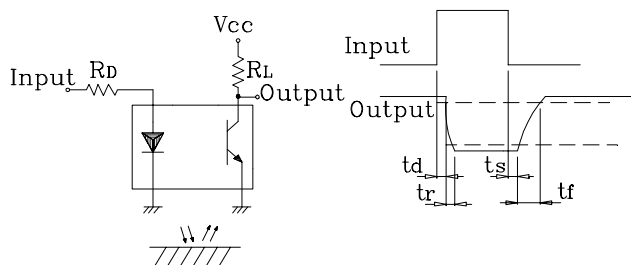


Fig. 6 Collector Dark Current vs. Ambient Temperature

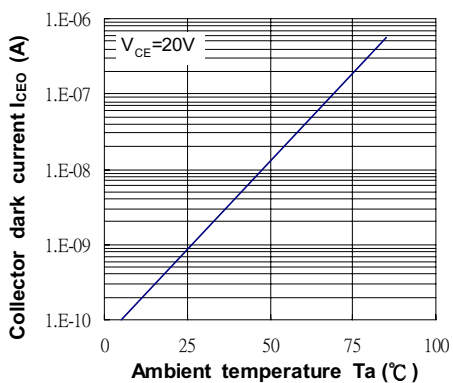


Fig. 7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

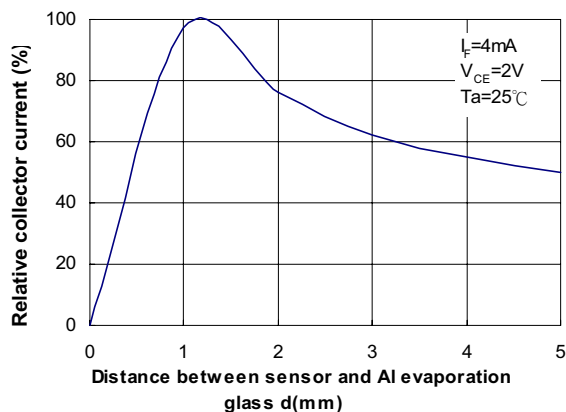


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

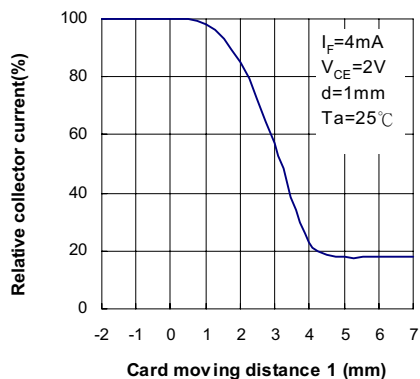
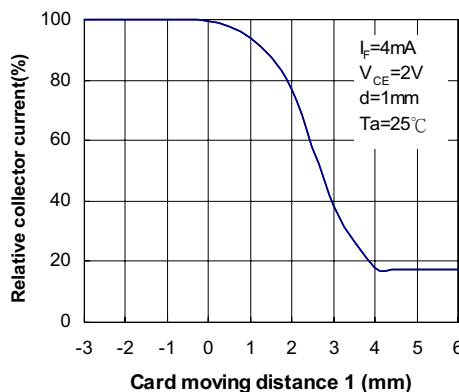
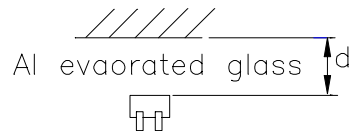


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7

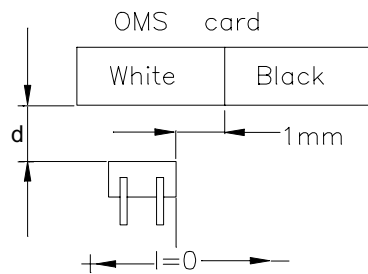


Correpond to Fig. 8
Test condition

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

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

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



Correpond to Fig. 9
Test condition

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

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

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

