

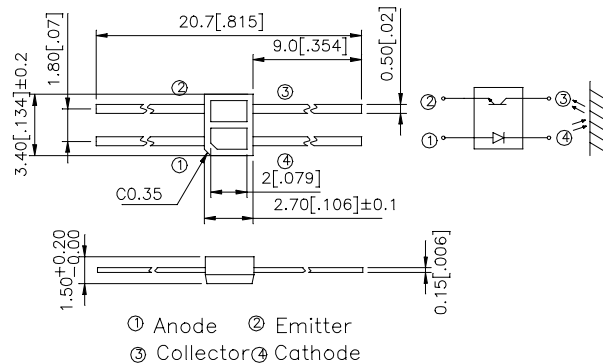
SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

*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 _F	50	mA
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _d	75	mW
Output	Collector-Emitter Voltage	V _{CEO}	35	V
	Emitter-Collector Voltage	V _{ECO}	6	V
	Collector Current	I _C	20	mA
	Collector Power Dissipation	P _C	75	mW
Operating Temperature		T _{opr}	-40~+85	° C
Storage Temperature		T _{stg}	-40~+100	° C
Lead Soldering Temperature (1/16 inch from body for 5 seconds)		T _{sol}	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	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

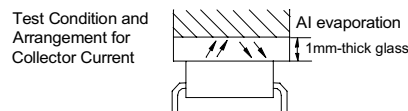


Fig.1 Forward Current vs. Forward Voltage

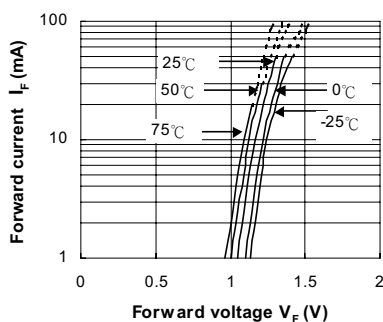


Fig.2 Collector Current vs. Forward Current

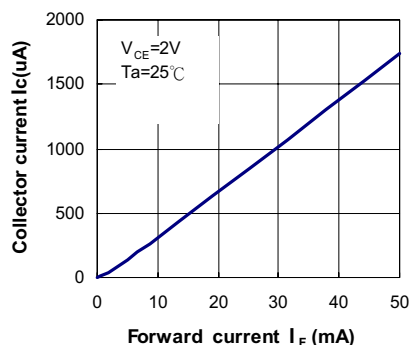


Fig.3 Collector Current vs. Collector-emitter Voltage

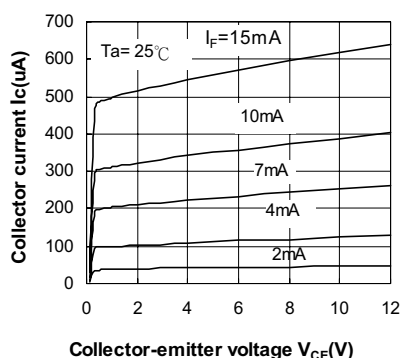


Fig.4 Relative Collector Current vs. Ambient Temperature

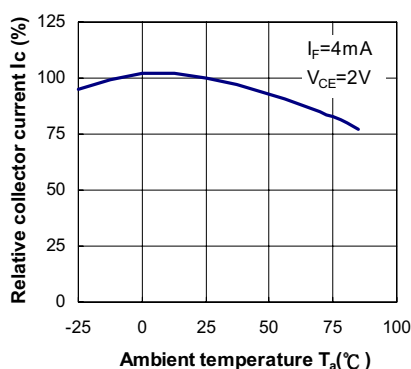
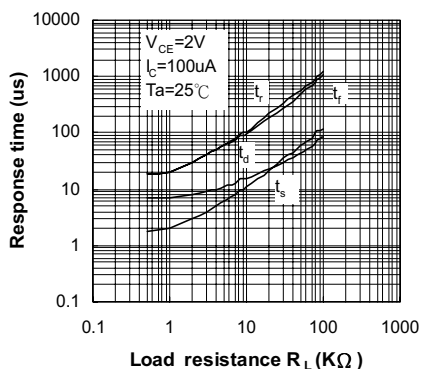


Fig.5 Response Time vs. Load Resistance



Test Circuit for Response Time

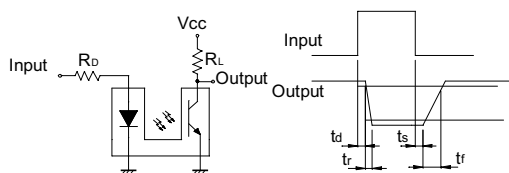


Fig.6 Collector Dark Current vs. Ambient Temperature

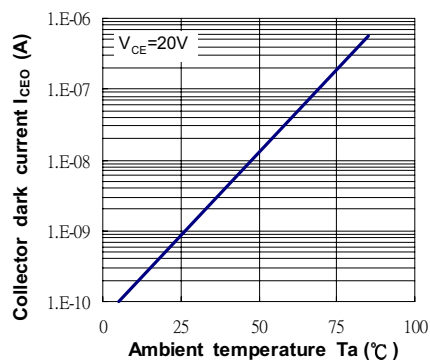


Fig.7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

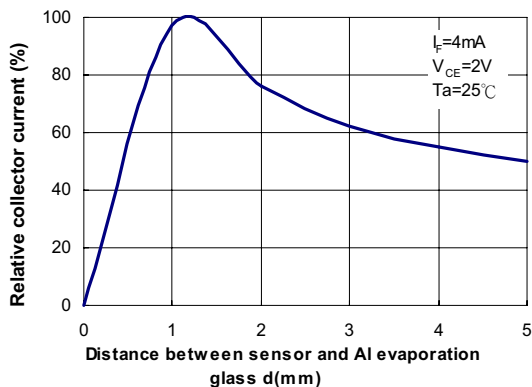


Fig.8 Relative Collector Current vs. Card Moving Distance(1)

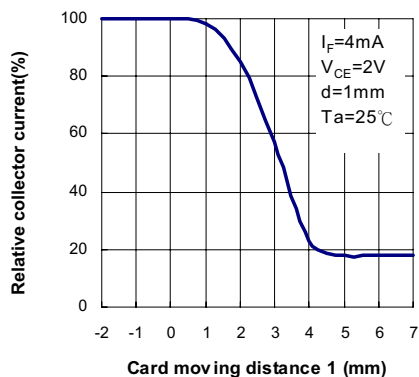
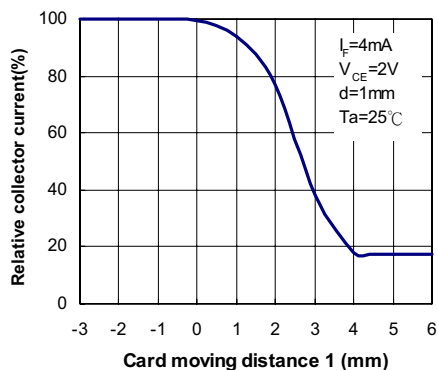
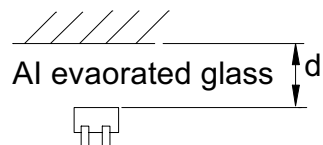


Fig.9 Relative Collector Current vs. Card Moving Distance(2)



Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7



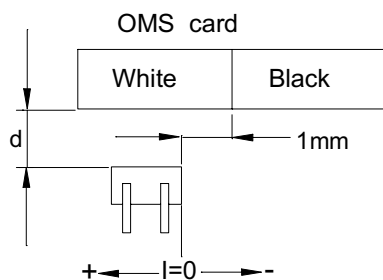
Correpond to Fig. 8

Test condition

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

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

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



Correpond to Fig. 9

Test condition

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

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

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

