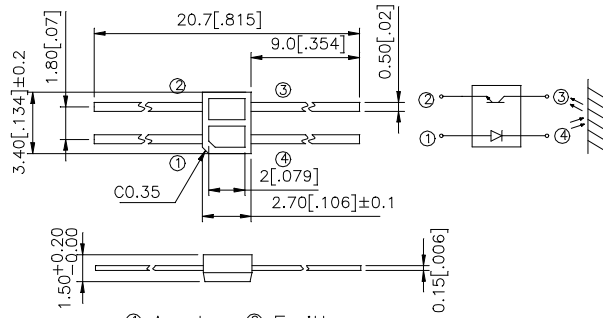


SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

*Features

- Compact and thin.
- Visible light cut-off type.
- High sensitivity.
- RoHS Compliant.



*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	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}	-40~+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(Ta=25°C)

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit	
Input	Forward voltage	V_F	$I_F=20\text{mA}$	1.0	1.2	1.5	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	t_r	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$ $R_L=100\Omega, d=1\text{mm}$	—	20	100	μSec
		Fall time	t_f		—	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	E	F	G
$I_C (\mu\text{A})$	100~120	100~250	200~400

Test Condition and Arrangement for Collector Current

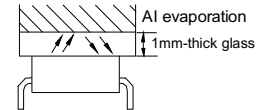


Fig.1 Forward Current vs. Forward Voltage

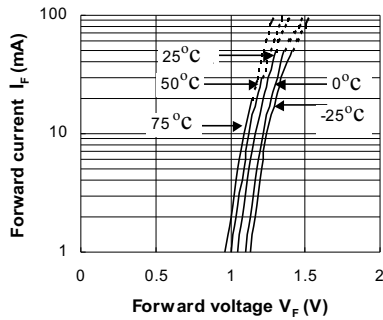


Fig.2 Collector Current vs. Forward Current

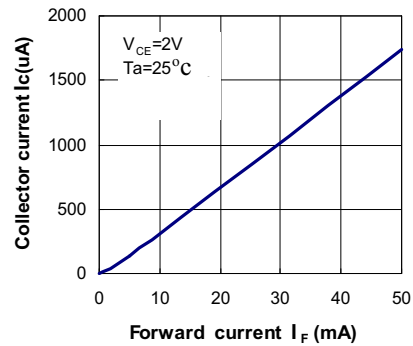


Fig.3 Collector Current vs. Collector-emitter Voltage

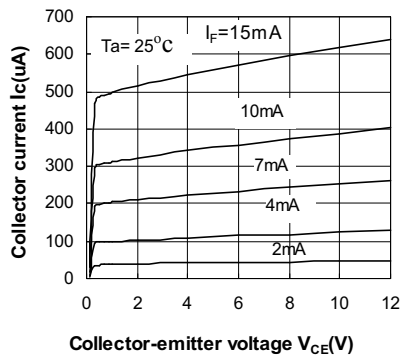


Fig.4 Relative Collector Current vs. Ambient Temperature

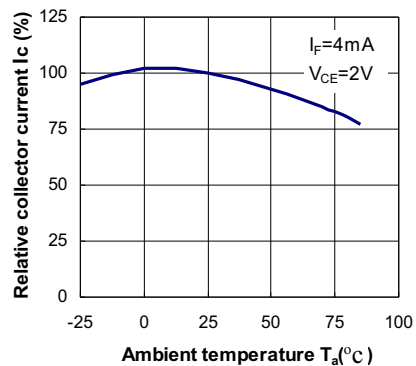
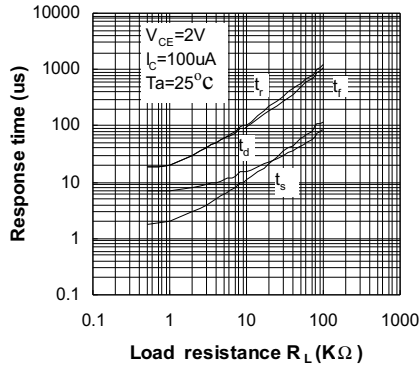


Fig.5 Response Time vs. Load Resistance



Test Circuit for Response Time

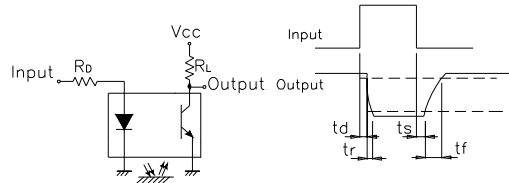


Fig.6 Collector Dark Current vs. Ambient Temperature

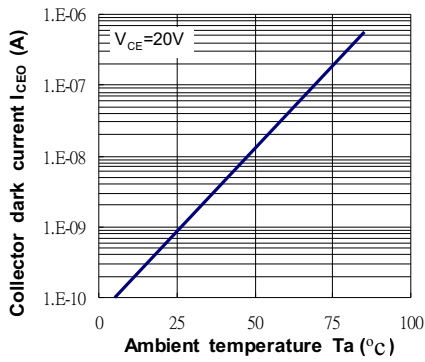


Fig.7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

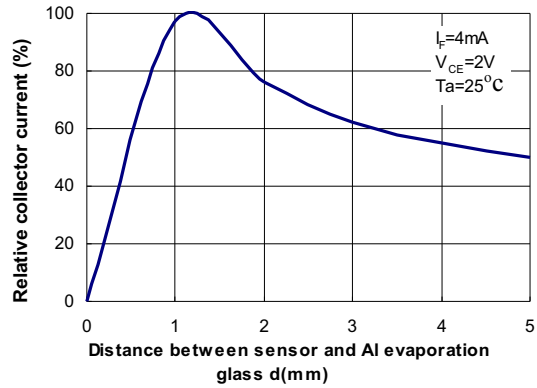


Fig.8 Relative Collector Current vs. Card Moving Distance(1)

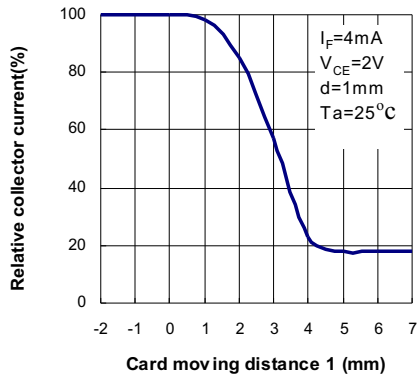
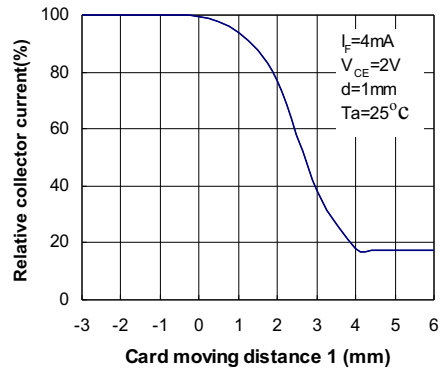
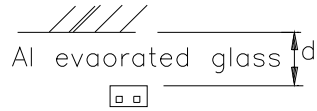


Fig.9 Relative Collector Current vs. Card Moving Distance(2)



Test Condition for Distance & Detecting Position Characteristics

Correspond to Fig. 7



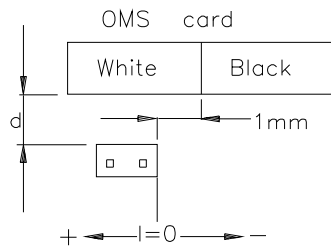
Correspond to Fig. 8

Test condition

$$I_F = 20\text{mA}$$

$$V_{CE} = 5\text{V}$$

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



Correspond to Fig. 9

Test condition

$$I_F = 20\text{mA}$$

$$V_{CE} = 5\text{V}$$

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

