SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

*Features

Compact and thin.

Visible light cut-off type.

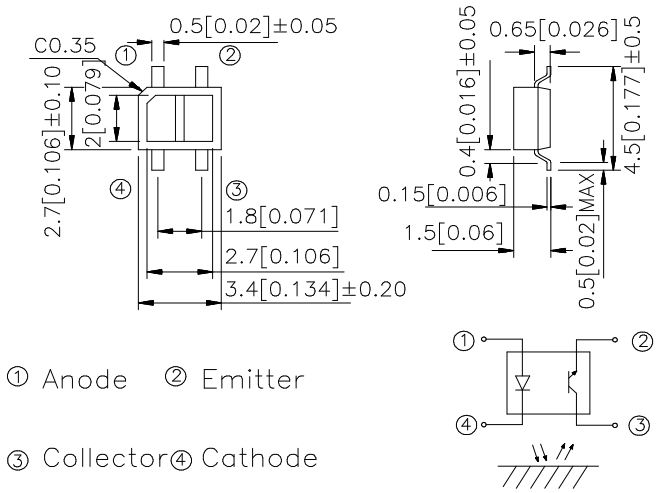
High sensitivity.

*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

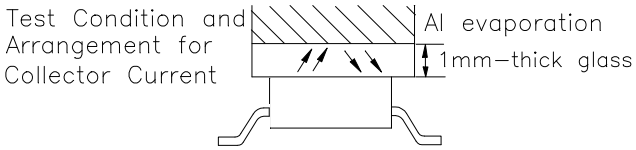
Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Collector power dissipation	P_C	75	mW
	Collector current	I_C	20	mA
	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
Operating temperature		Topr	-25~+85	° C
Storage temperature		Tstg	-40~+100	° C
Soldering temperature (1/16 inch from body for 5 seconds)		Tsol	260	° C

■Electro-optical Characteristics

Parameter			Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage		V_F	I_F=20mA	1.0	1.2	1.5	V
	Reverse current		I_R	V_R=6V	——	——	10	μA
Output	Collector dark current		I_{CEO}	V_{CE}=20V	——	10^{-9}	10^{-7}	A
Transfer charact-eristics	*1 Collector Current		I_C	V_{CE}=2V, I_F=4mA	10	——	400	μA
	*2 Leak Current		I_{LEAK}	V_{CE}=2V, I_F=4mA	——	——	0.1	μA
	Response time	Rise time	tr	V_{CE}=2V, I_C=100uA R_L=1KΩ,d=1mm	——	20	100	μSec
		Fall time	tf		——	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 (μA)	10~120	100~250	200~400

Fig. 1 Forward Current vs. Forward Voltage

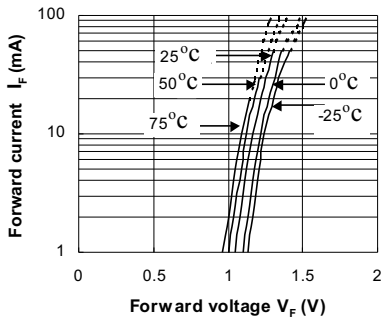


Fig. 2 Collector Current vs. Forward Current

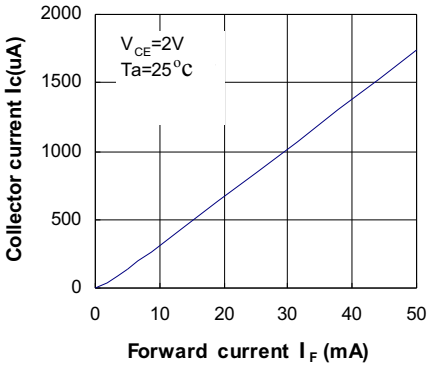


Fig. 3 Collector Current vs. Collector-emitter Voltage

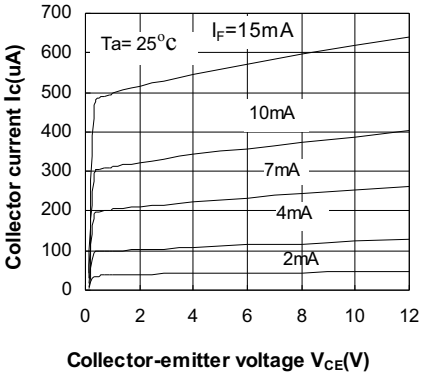


Fig. 4 Relative Collector Current vs. Ambient Temperature

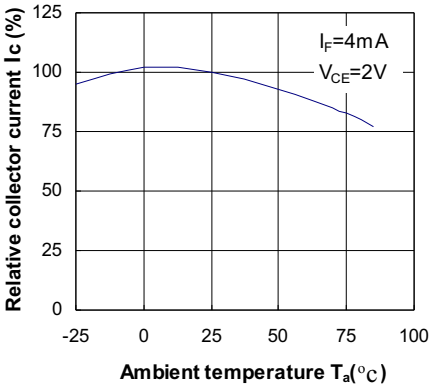
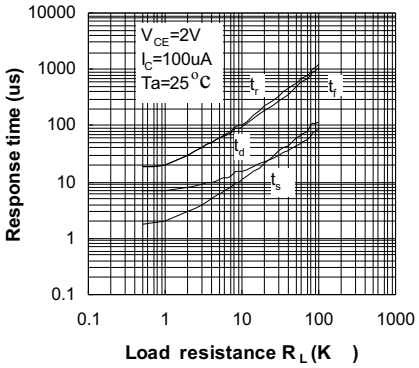


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

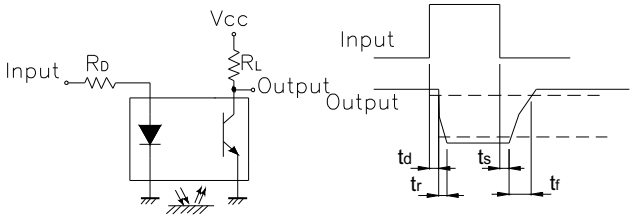


Fig. 6 Collector Dark Current vs. Ambient Temperature

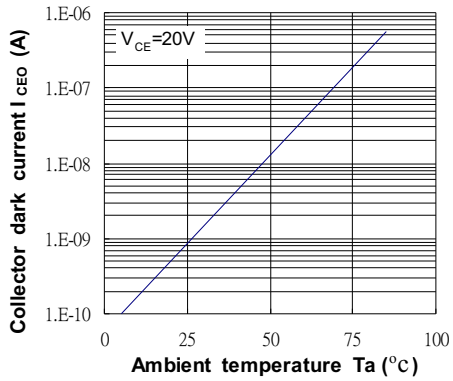


Fig. 7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

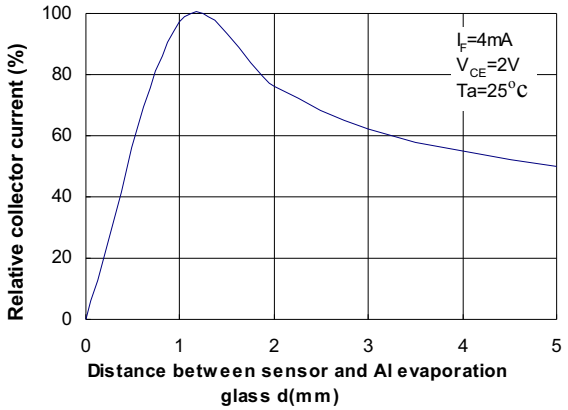


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

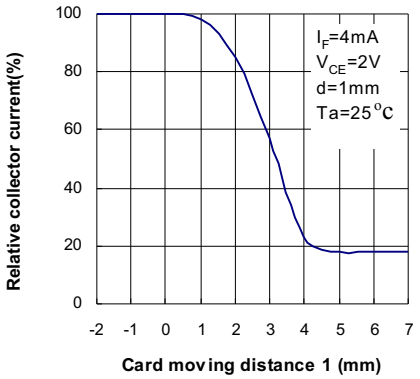
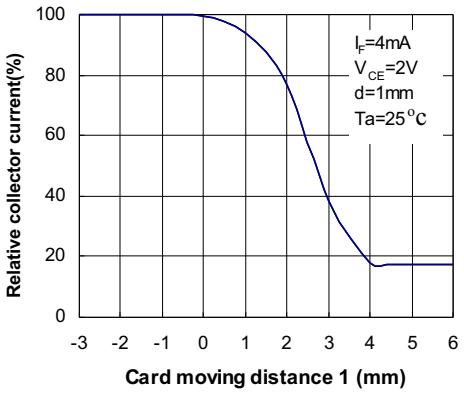
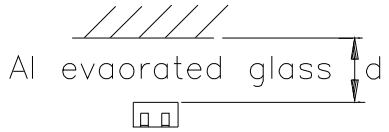


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Condition for Distance &Detecting PositionCharacteristics

Correpond to Fig. 7



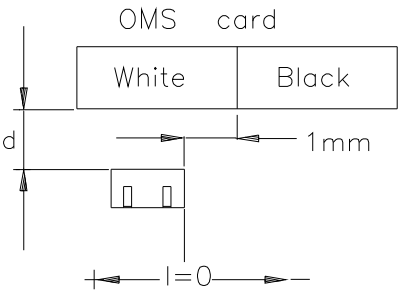
Correpond to Fig. 8

Test condition

$I_F = 4mA$

$V_{CE} = 2V$

d=1mm



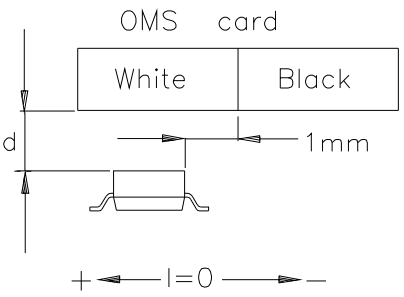
Correpond to Fig. 9

Test condition

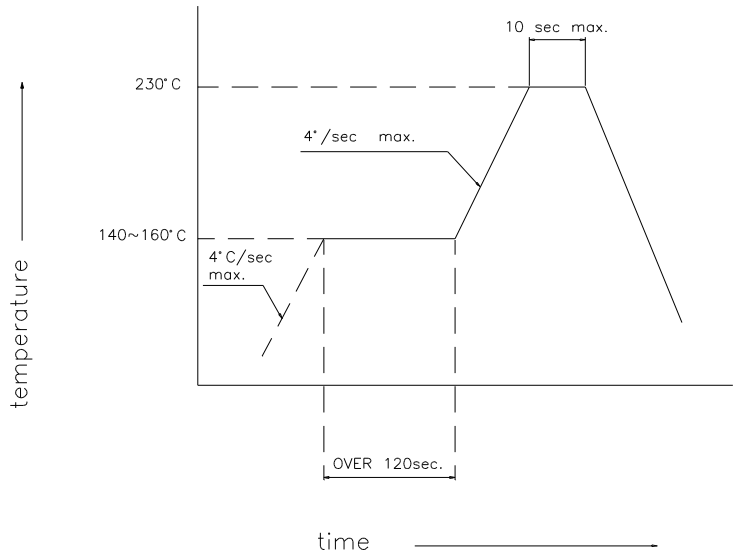
$I_F = 4mA$

$V_{CE} = 2V$

d=1mm



Reflow Soldering Profile



Recommended Soldering Pattern
(Units : mm)