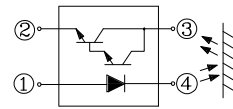
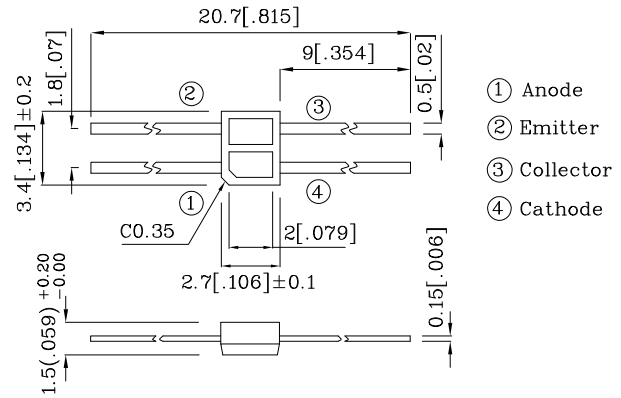


Features

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

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		T_{opr}	-25~+85	$^\circ\text{C}$
Storage temperature		T_{stg}	-40~+100	$^\circ\text{C}$
Soldering temperature (1/16 inch from body for 5 seconds)		T_{sol}	260	$^\circ\text{C}$

Electrical / Optical Characteristics at $T_A=25^\circ\text{C}$

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}	$V_{CE}=10\text{V}, I_F=0\text{mA}$	-	-	10^{-6}	A	
Transfer Characteristics	*1 Collector current	I_C	$V_{CE}=2\text{V}$ $I_F=4\text{mA}$	-	3	-	mA	
	*2 Leak current	I_{LEAK}	$V_{CE}=5\text{V}$ $I_F=4\text{mA}$	-	-	5	μA	
	Response time	Rise time	t_r	$V_{CE}=2\text{V}$ $I_C=10\text{mA}$	-	80	400	μSec
		Fall time	t_f	$R_L=1000\ \Omega, d=1\text{mm}$	-	70	400	μSec

*1 The condition and arrangement of the reflective object are shown below.

*2 Without reflective object.

Test Condition and Arrangement for Collector Current

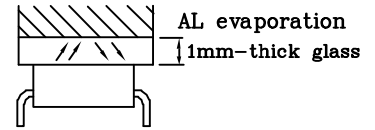


Fig.1 Forward Current vs. Forward Voltage

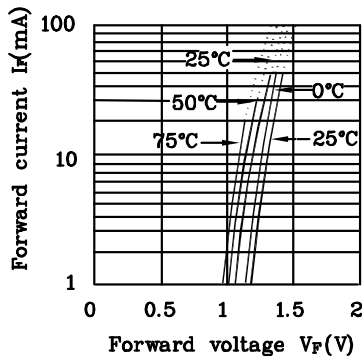


Fig.2 Collector Current vs. Forward Current

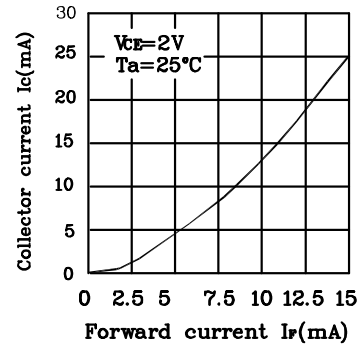


Fig.3 Collector Current vs. Collector-emitter Voltage

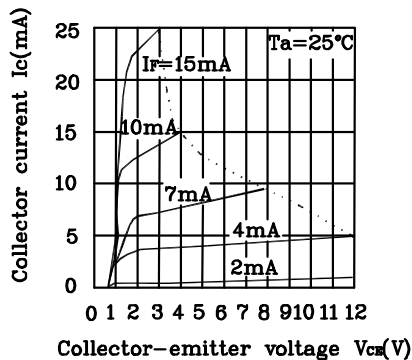


Fig.4 Relative Collector Current vs. Ambient Temperature

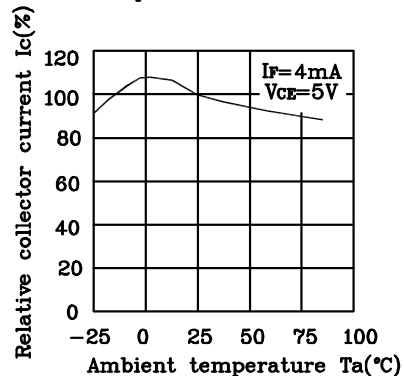
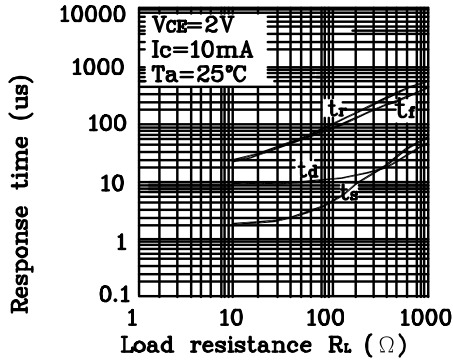


Fig.5 Response Time vs. Load Resistance



Test Circuit for Response Time

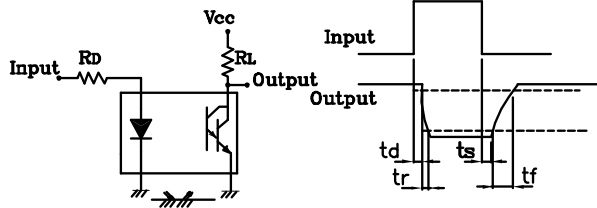


Fig.6 Collector Dark Current vs. Ambient Temperature

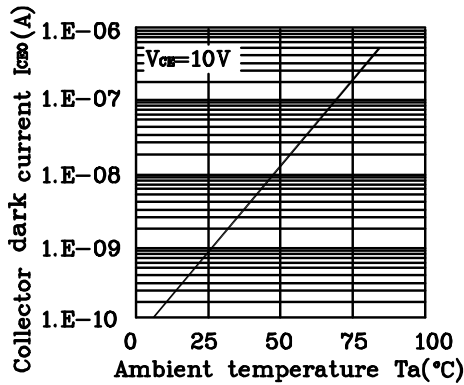


Fig.7 Relative Collector Current vs. Distance between Sensor and AL Evaporation Glass

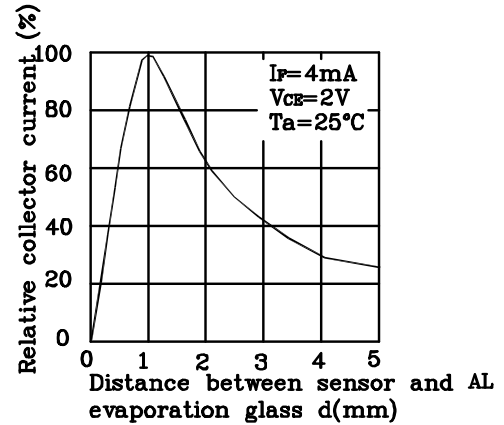


Fig.8 Relative Collector Current vs. Card Moving Distance(1)

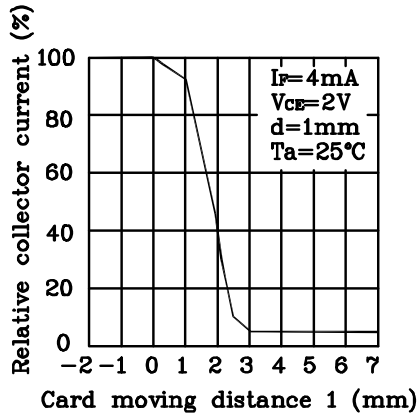
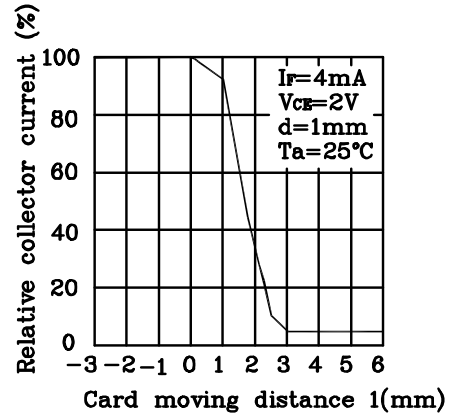
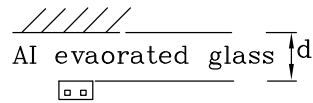


Fig.9 Relative Collector Current vs. Card Moving Distance(2)



Test Condition for Distance & Detecting Position Characteristics

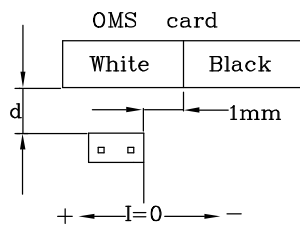
Correpond to Fig. 7



Correpond to Fig. 8

Test condition

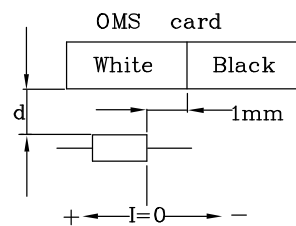
$I_F = 4\text{mA}$
 $V_{CE} = 2\text{V}$
 $d = 1\text{mm}$



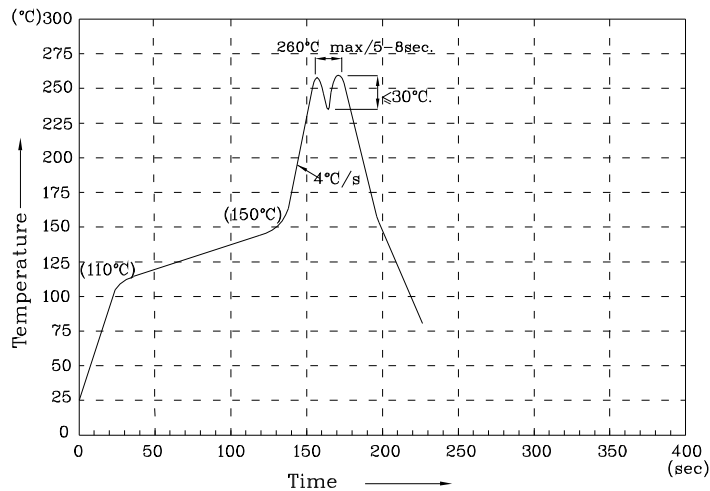
Correpond to Fig. 9

Test condition

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



Wave Soldering Profile For Lead-free Through-hole LED.



NOTES:

1. Recommend the wave temperature 245°C~260°C. The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85 degree°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. No more than once.