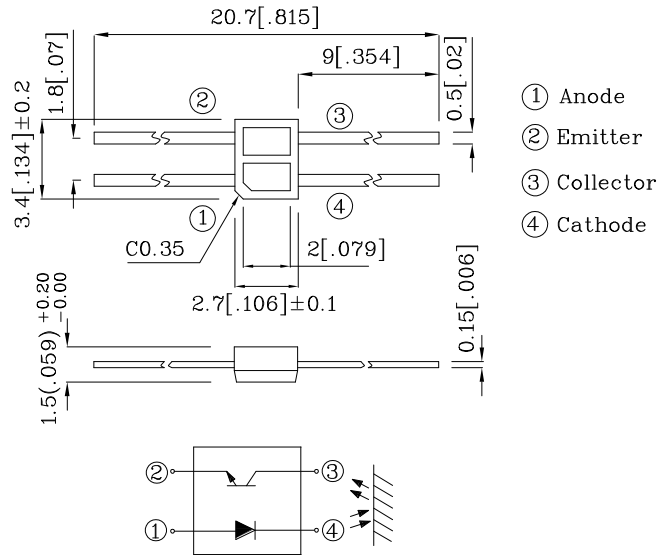


Features

- 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 (T_A=25°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	20	mA
	Collector power dissipation	P _C	75	mW
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

Electrical / Optical Characteristics at TA=25°C

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	μ A	
Output	Collector dark current	I _{CEO}	V _{CE} =20V	-	10 ⁻⁹	10 ⁻⁷	A	
Transfer Characteristics	*1 Collector current	I _C	V _{CE} =2V I _F =4mA	10	-	400	μ A	
	*2 Leak current	I _{LEAK}	V _{CE} =2V I _F =4mA	-	-	0.1	μ A	
	Response time	Rise time	t _r	V _{CE} =2V I _C =100 μ A	-	20	100	μ Sec
		Fall time	t _f	R _L =100 Ω, d=1mm	-	20	100	μ Sec

*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 (μ A)	100-120	100-250	200-400

Test Condition and Arrangement for Collector Current

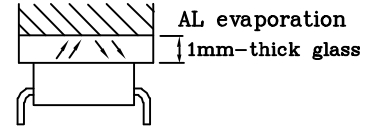


Fig.1 Forward Current vs. Forward Voltage

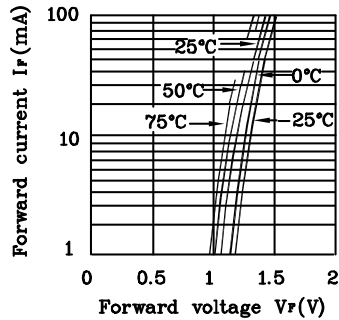


Fig.2 Collector Current vs. Forward Current

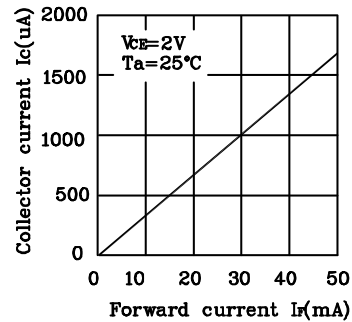


Fig.3 Collector Current vs. Collector-emitter Voltage

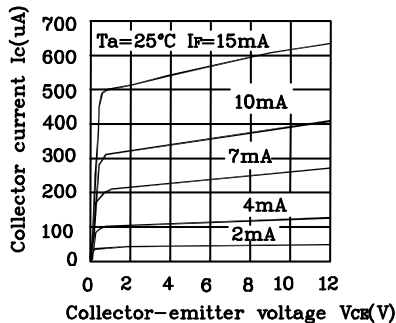


Fig.4 Relative Collector Current vs. Ambient Temperature

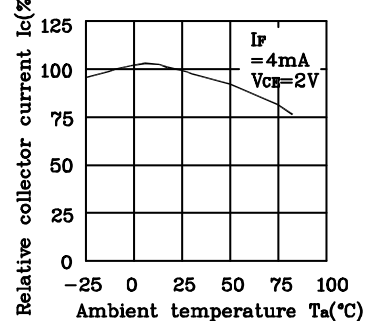
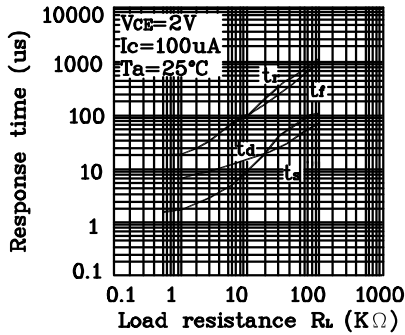


Fig.5 Response Time vs. Load Resistance



Test Circuit for Response Time

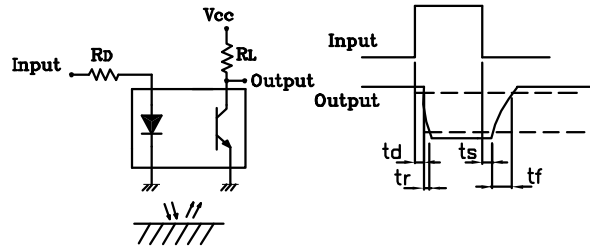


Fig.6 Collector Dark Current vs. Ambient Temperature

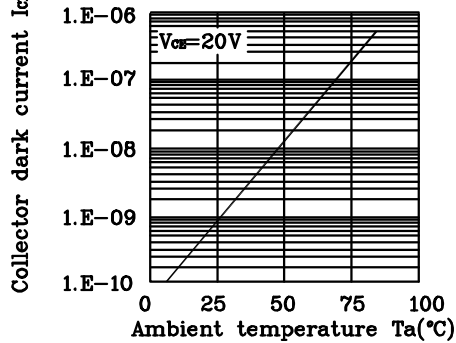


Fig.7 Relative Collector Current vs. Distance between Sensor and AL Evaporation Glass

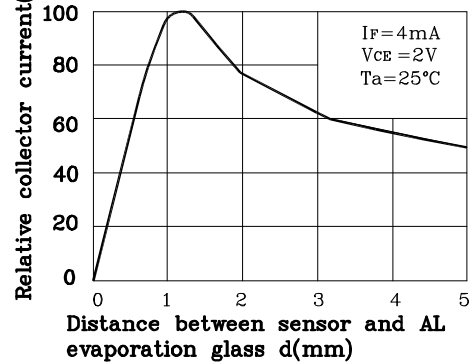


Fig.8 Relative Collector Current vs. Card Moving Distance(1)

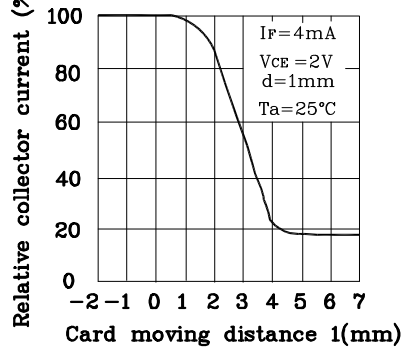
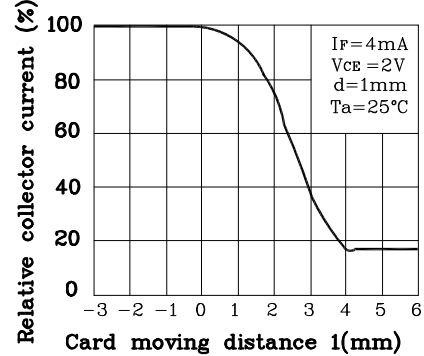
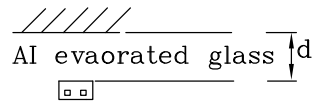


Fig.9 Relative Collector Current vs. Card Moving Distance(2)



Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7



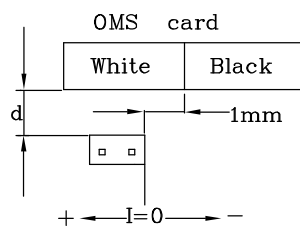
Correpond to Fig. 8

Test condition

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

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

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



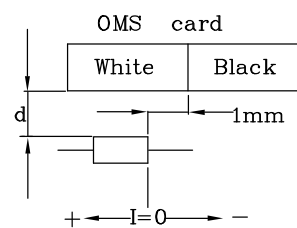
Correpond to Fig. 9

Test condition

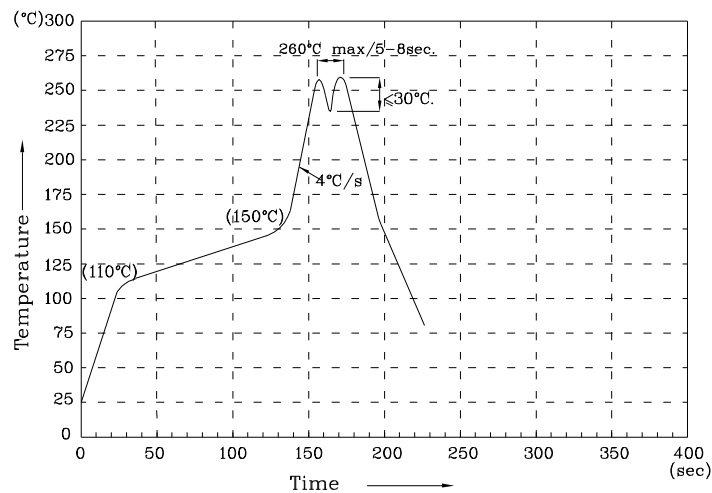
$$I_F = 20\text{mA}$$

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

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



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.