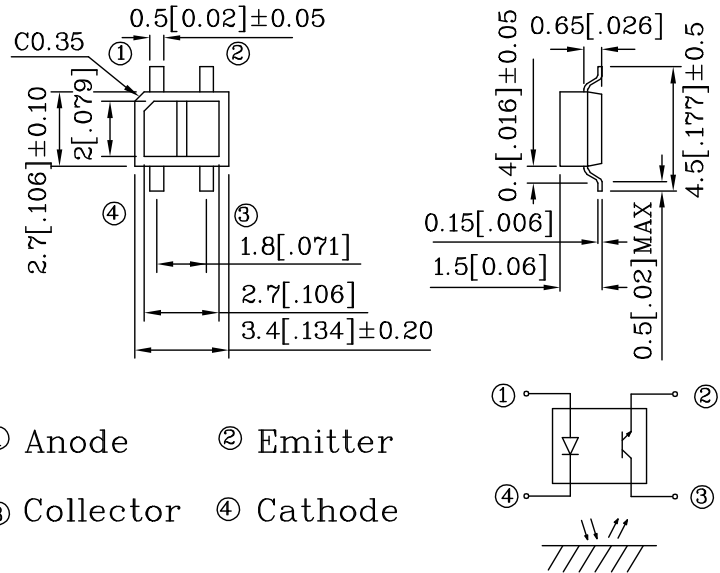


### Features

- Compact and thin.
- Visible light cut-off type.
- High sensitivity.
- Package : 1000pcs / reel.
- 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)

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Reverse voltage	VR	6	V
	Power dissipation	Pa	75	mW
	Peak Forward Current (Pulse Width ≤ 100μS,Duty Cycle=1%)	IFP	1	A
Output	Collector-emitter voltage	VCEO	35	V
	Emitter-collector voltage	VECO	6	V
	Collector current	IC	20	mA
	Collector power dissipation	PC	75	mW
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

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	$\mu\text{A}$
	Peak Wavelength	$\lambda_p$	$I_F=20\text{mA}$	-	940	-	nm
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	$\mu\text{A}$
	*2 Leak current	$I_{LEAK}$	$V_{CE}=2\text{V}$ $I_F=4\text{mA}$	-	-	0.1	$\mu\text{A}$
	Response time	Rise time	$t_r$	$V_{CE}=2\text{V}$ $I_C=100\mu\text{A}$ $R_L=1\text{K}\Omega$ $d=1\text{mm}$	-	20	100
Fall time		$t_f$		-	20	100	$\mu\text{Sec}$

\*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
$I_C (\mu\text{A})$	10~120	100~250	200~400

Test Condition and Arrangement for Collector Current

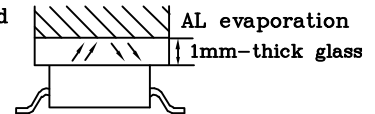


Fig.1 Forward Current vs. Forward Voltage

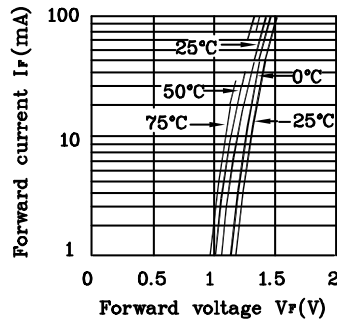


Fig.2 Collector Current vs. Forward Current

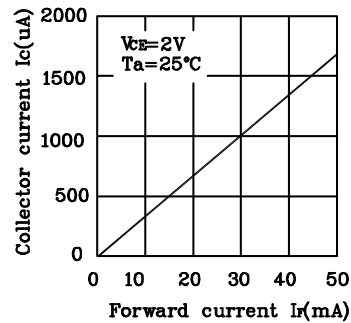


Fig.3 Collector Current vs. Collector-emitter Voltage

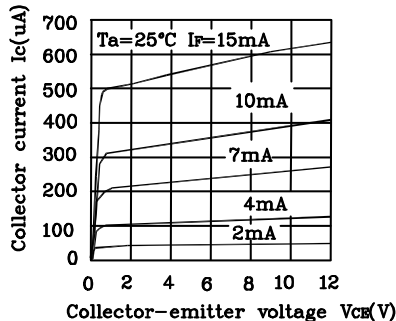


Fig.4 Relative Collector Current vs. Ambient Temperature

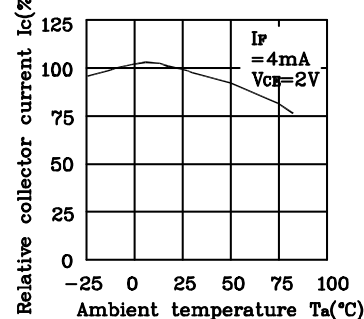
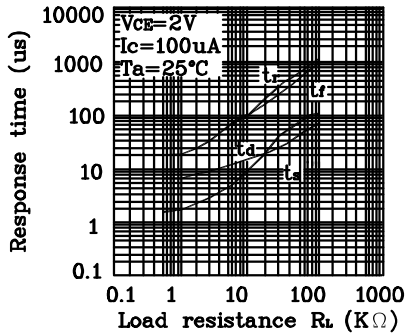


Fig.5 Response Time vs. Load Resistance



Test Circuit for Response Time

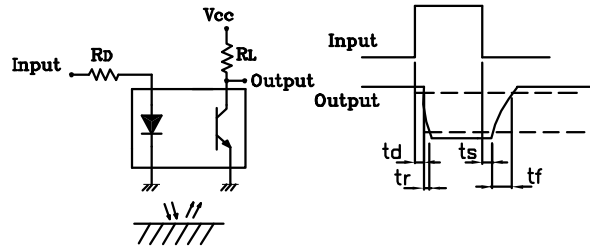


Fig.6 Collector Dark Current vs. Ambient Temperature

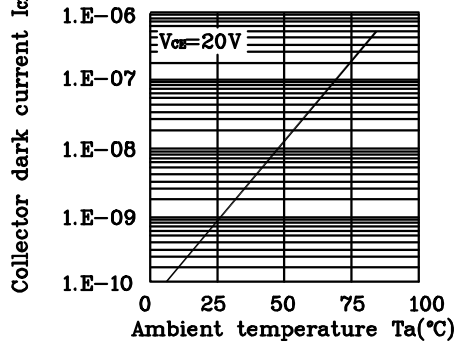


Fig.7 Relative Collector Current vs. Distance between Sensor and AL Evaporation Glass

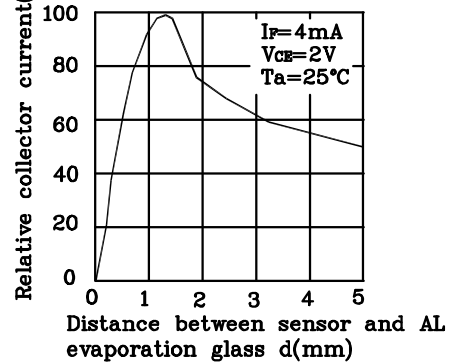


Fig.8 Relative Collector Current vs. Card Moving Distance(1)

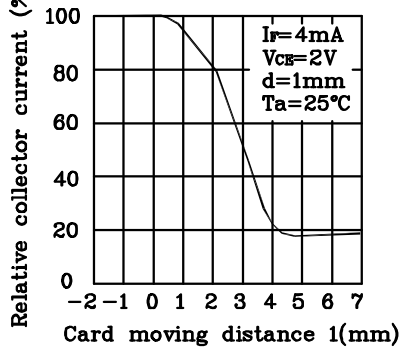
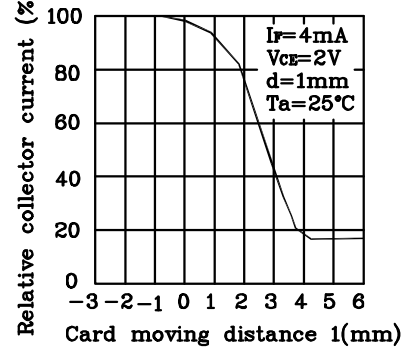
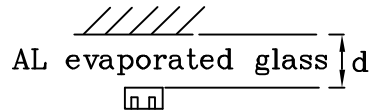


Fig.9 Relative Collector Current vs. Card Moving Distance(2)



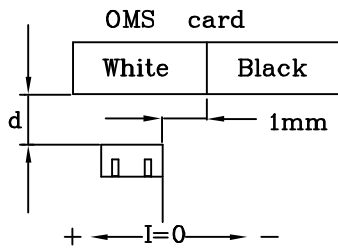
### Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7



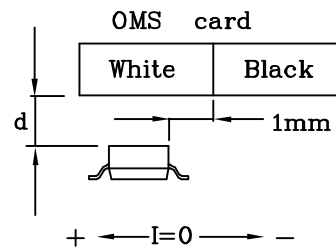
Correpond to Fig. 8  
Test condition

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

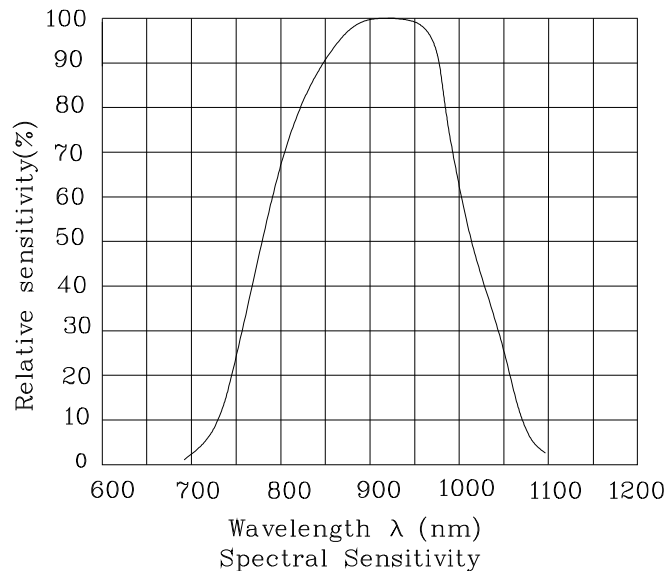


Correpond to Fig. 9  
Test condition

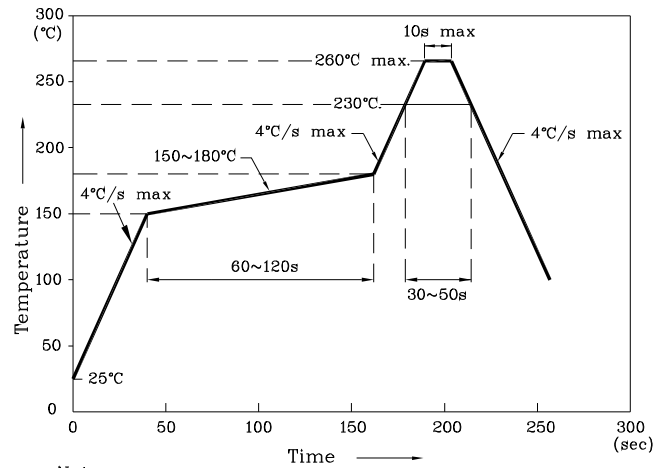
$I_F = 4\text{mA}$   
 $V_{CE} = 2\text{V}$   
 $d = 1\text{mm}$



PI-A7



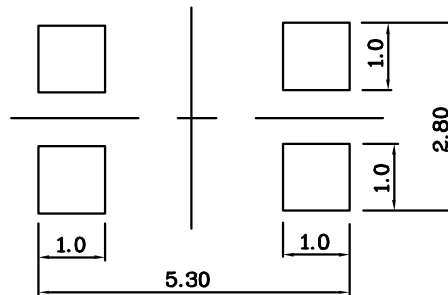
Reflow Soldering Profile For Lead-free SMT Process.



Notes:

1. Maximum soldering temperature should not exceed 260°C.
2. Recommended reflow temperature: 145°C-260°C.
3. Do not put stress to the epoxy resin during high temperatures conditions.

❖ Recommended Soldering Pattern (Units : mm;Tolerance:± 0.1)



❖ Tape Specification (Units : mm)

