

ATIR0811S

Photointerrupter - Reflective Type

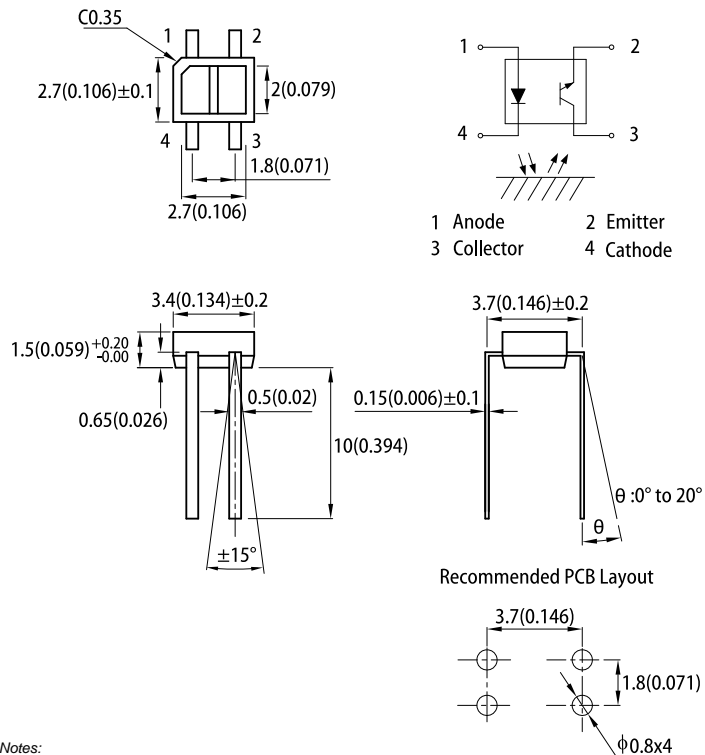
FEATURES

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

APPLICATIONS

- Cassette tape recorders, VCRs
- Floppy disk drives
- Various microcomputerized control equipment

PACKAGE DIMENSIONS



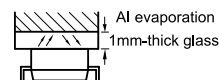
Notes:
 1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
 3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^\circ\text{C}$

Parameter	Symbol	Value				Units	Test Conditions	
		Code.	Min.	Typ.	Max.			
Input	Forward voltage	V_F		1.0	1.2	1.5	V	$I_F=20\text{mA}$
	Reverse current	I_R		-	-	10	μA	$V_R=6\text{V}$
Output	Collector dark current	I_{CEO}		-	10^{-9}	10^{-7}	A	$V_{CE}=20\text{V}$
Transfer characteristics	Collector Current ^[1]	I_C	E	10	-	120	μA	$I_F=4\text{mA}, V_{CE}=2\text{V}$
			F	100	-	250		
			G	200	-	400		
	Leak Current ^[2]	I_{LEAK}		-	-	0.1	μA	$I_F=4\text{mA}, V_{CE}=2\text{V}$
Response time	Rise time	t_r		-	20	100	μs	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$ $R_L=1\text{K}\Omega, d=1\text{mm}$
	Fall time	t_f		-	20	100		

Notes:
 1. Test condition of collector current is shown below.
 2. Without reflective object.
 3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Test Condition and Arrangement for Collector Current



ABSOLUTE MAXIMUM RATINGS at $T_A=25^\circ\text{C}$

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P_D	75	mW
	Peak Forward Current (Pulse Width $\leq 100\mu\text{s}$, Duty Cycle=1%)	I_{FP}	1	A
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}	-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	$^\circ\text{C}$

Note:
1. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

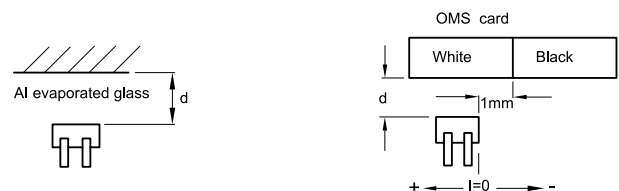
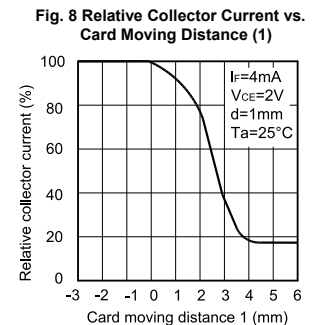
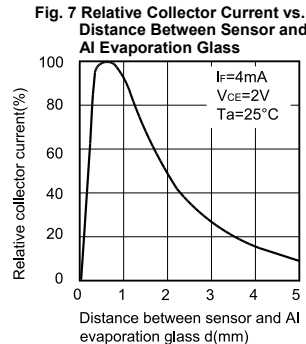
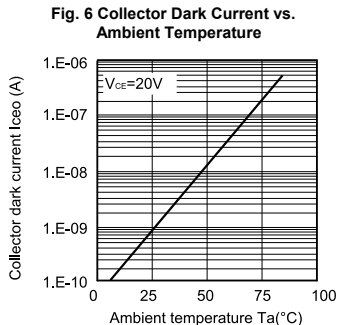
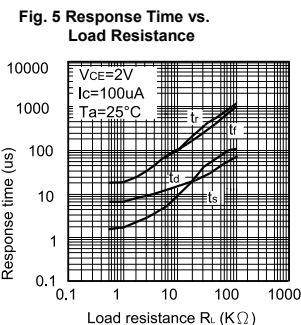
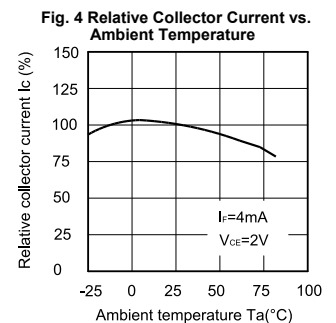
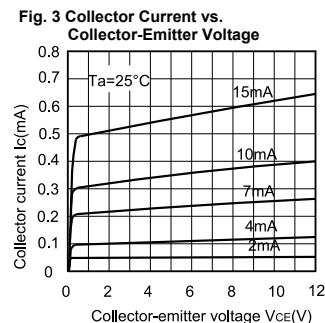
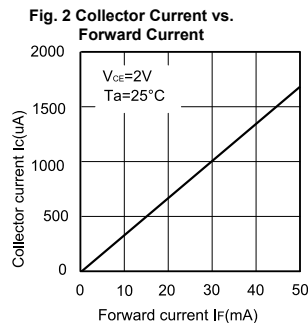
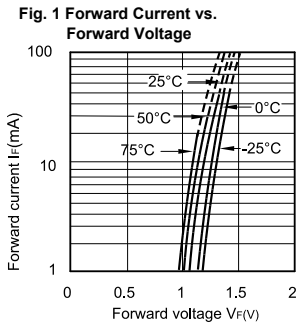
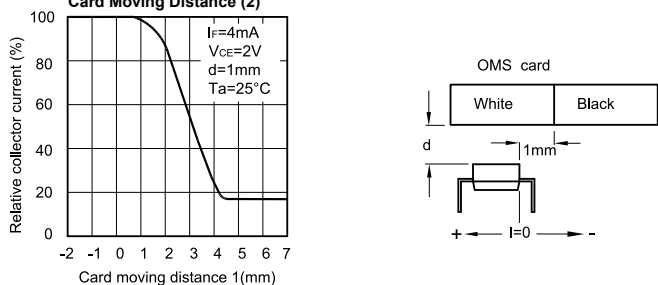
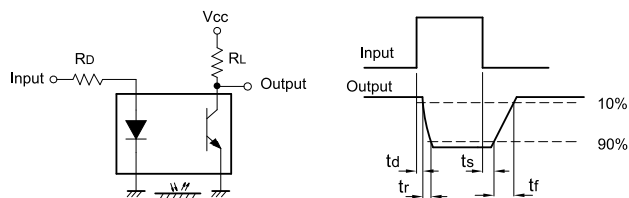


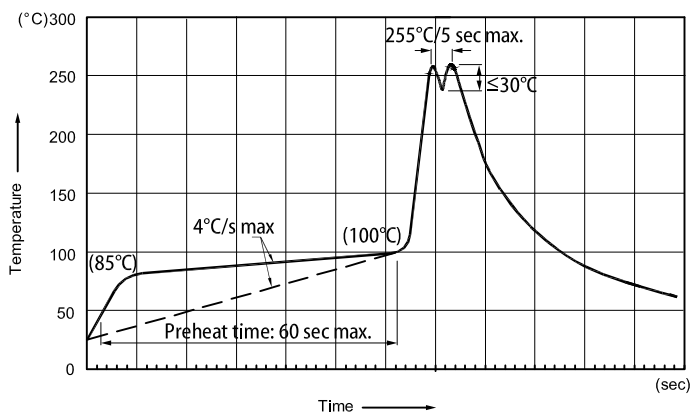
Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Circuit for Response Time



RECOMMENDED WAVE SOLDERING PROFILE



Notes:

1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C .
2. Peak wave soldering temperature between $245^\circ\text{C} \sim 255^\circ\text{C}$ for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C .
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.

PACKING & LABEL SPECIFICATIONS

