

ATIR0711S
Photointerrupter - Reflective Type



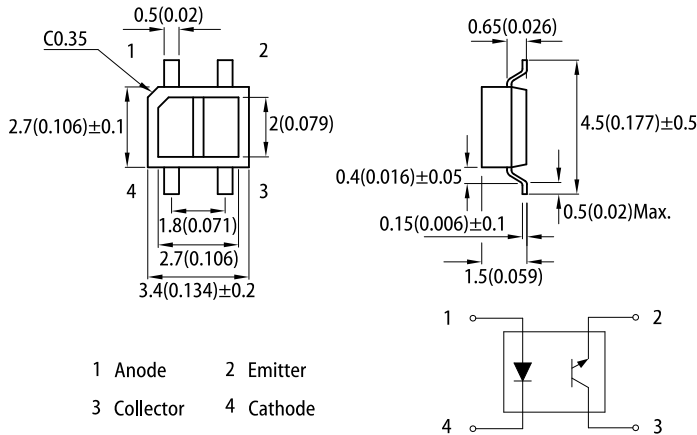
FEATURES

- Compact and thin
- Visible light cut-off type
- High sensitivity
- Package: 1000 pcs / Reel
- Moisture sensitivity level: 4
- RoHS compliant

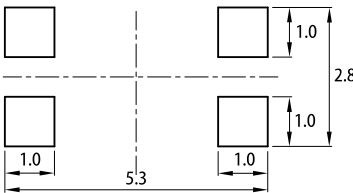
APPLICATIONS

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

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN
(units : mm; tolerance : ± 0.1)



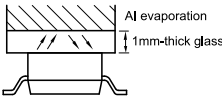
- Notes:
1. All dimensions are in millimeters (inches).
 2. Tolerance is ±0.25(0.01") unless otherwise noted.
 3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
 4. The device has a single mounting surface. The device must be mounted according to the specifications.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter		Symbol	Value				Unit	Test Conditions
			Code.	Min.	Typ.	Max.		
Input	Forward Voltage	V _F	-	1.0	1.2	1.5	V	I _F =20mA
	Reverse Current	I _R	-	-	-	10	μA	V _R =6V
Output	Collector Dark Current	I _{CEO}	-	-	10 ⁻⁹	10 ⁻⁷	A	V _{CE} =20V
Transfer Characteristics	Collector Current ^[1]	I _C	E	10	-	120	μA	I _F =4mA, V _{CE} =2V
			F	100	-	250		
			G	200	-	400		
	Leak Current ^[2]	I _{LEAK}	-	-	-	0.1	μA	I _F =4mA, V _{CE} =2V
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	-	-	-	0.4	V	I _F =20mA, I _C =0.1mA
Response Time	Rise Time	t _r	-	-	20	100	μs	V _{CE} =2V, I _C =100μA R _L =1K Ω, d=1mm
	Fall Time	t _f	-	-	20	100	μs	

- 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	$^{\circ}\text{C}$

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. 1 Forward Current vs. Forward Voltage

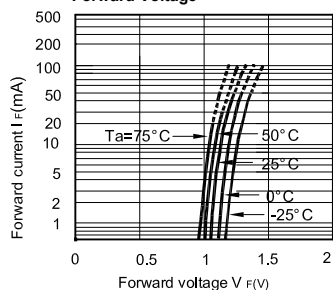


Fig. 2 Collector Current vs. Forward Current

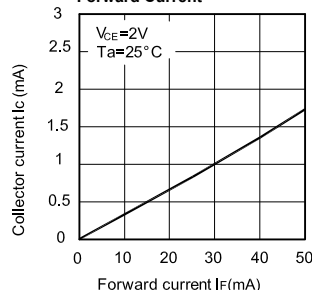


Fig. 3 Collector Current vs. Collector-Emitter Voltage

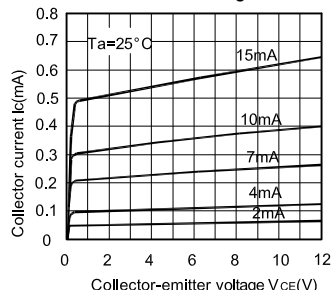


Fig. 4 Relative Collector Current vs. Ambient Temperature

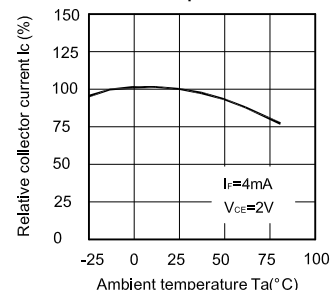


Fig. 5 Response Time vs. Load Resistance

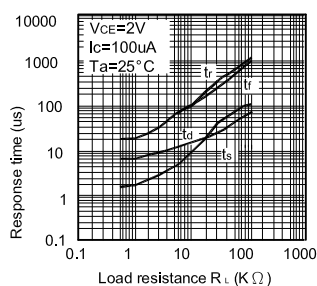


Fig. 6 Collector Dark Current vs. Ambient Temperature

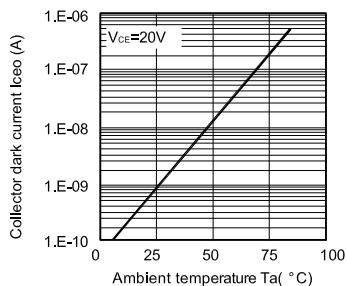


Fig. 7 Relative Collector Current vs. Distance Between Sensor and Al Evaporation Glass

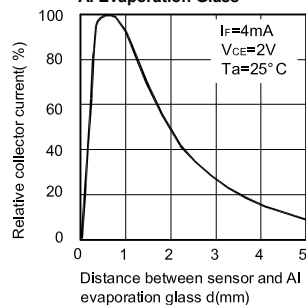


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

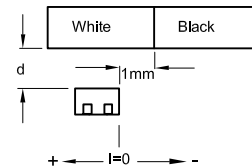
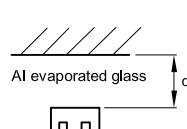
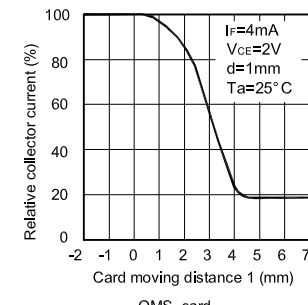
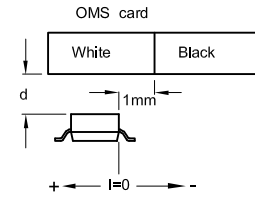
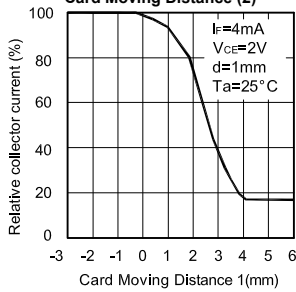
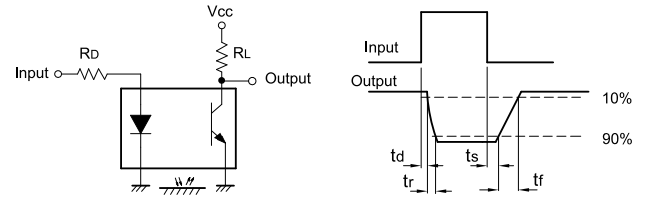


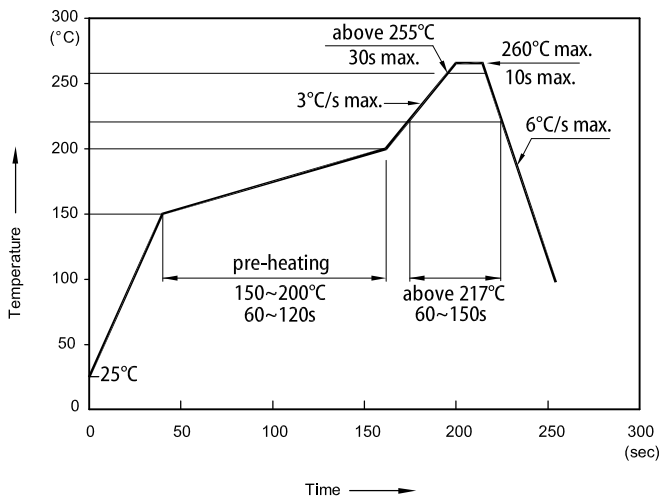
Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Circuit for Response Time

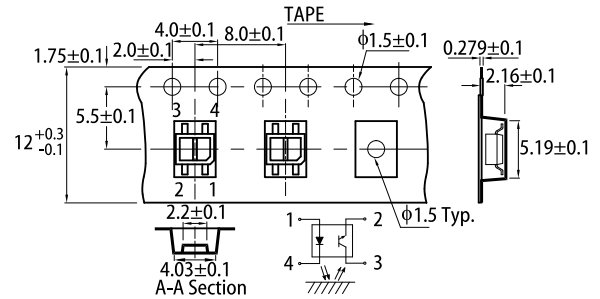


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

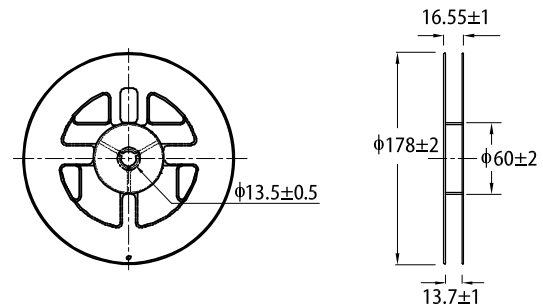


- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
 2. The maximum number of reflow soldering passes is 2 times.
 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS

