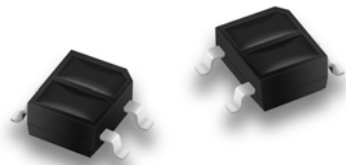


ATIR0721DS
Photointerrupter - Reflective Type



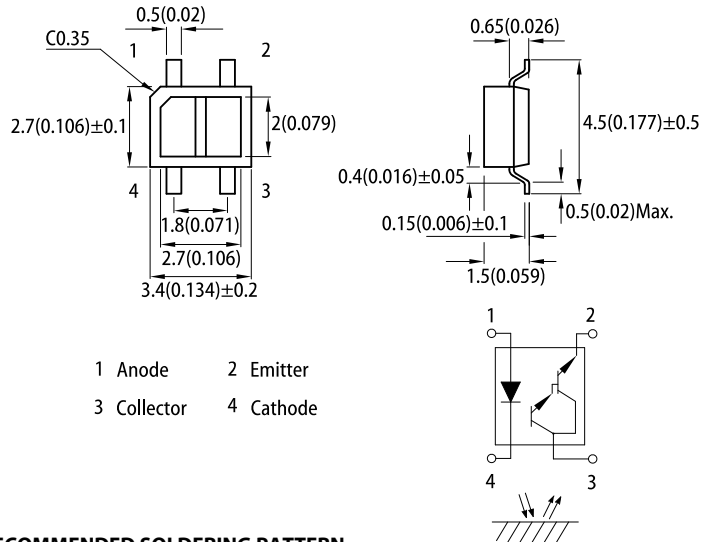
FEATURES

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

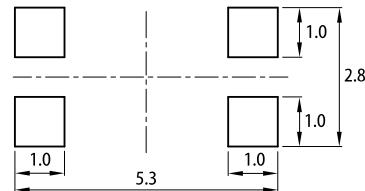
APPLICATIONS

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

PACKAGE DIMENSIONS



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



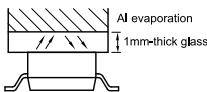
Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted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

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter			Symbol	Value			Unit	Test Conditions
				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 ⁻⁶	A	I _F =0mA, V _{CE} =10V
Transfer Characteristics	Collector Current ^[1]		I _C	-	10	-	mA	I _F =4mA, V _{CE} =2V
	Leak Current ^[2]		I _{LEAK}	-	-	5	μA	I _F =4mA, V _{CE} =5V
	Collector-Emitter Saturation Voltage		V _{CE(sat)}	-	-	1	V	I _F =40mA, I _C =1mA
	Response Time	Rise Time	t _r	-	80	400	μs	V _{CE} =2V, I _C =10mA R _L =100 Ω, d=1mm
		Fall Time	t _f	-	70	400	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	50	mA
	Collector Power Dissipation	P_C	75	mW
Operating Temperature		T_{opr}	-25~+85	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-40~+100	$^{\circ}\text{C}$

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

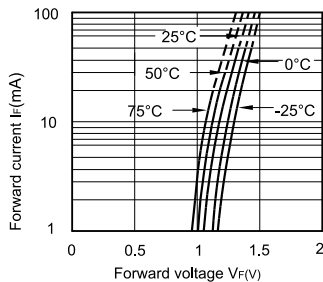


Fig. 2 Collector Current vs. Forward Current

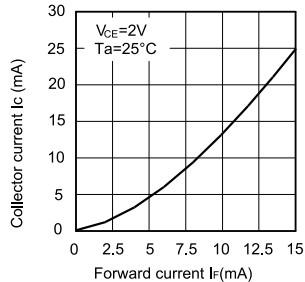


Fig. 3 Collector Current vs. Collector-Emitter Voltage

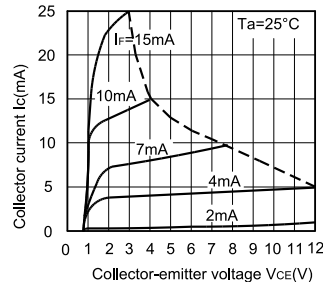


Fig. 4 Relative Collector Current vs. Ambient Temperature

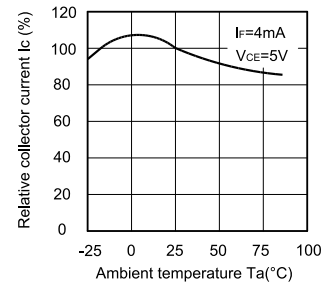


Fig. 5 Response Time vs. Load Resistance

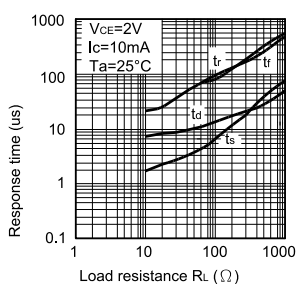


Fig. 6 Collector Dark Current vs. Ambient Temperature

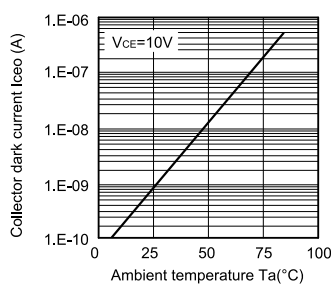


Fig. 7 Relative Collector Current vs. Distance Between Sensor and Al Evaporation Glass

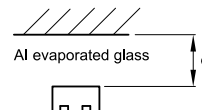
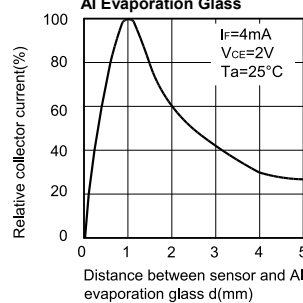


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

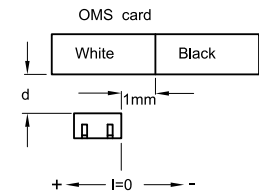
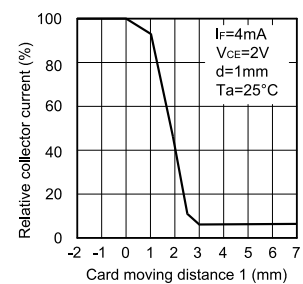
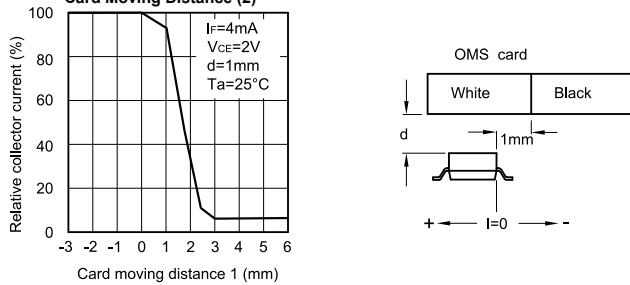
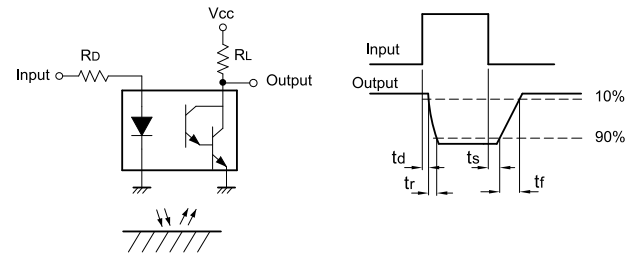


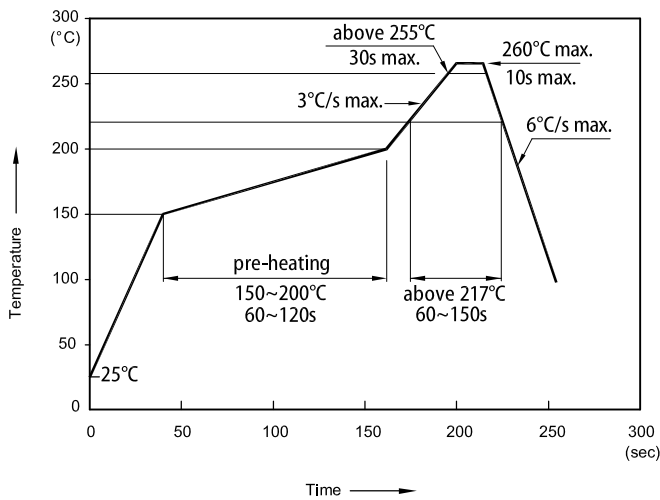
Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Circuit for Response Time

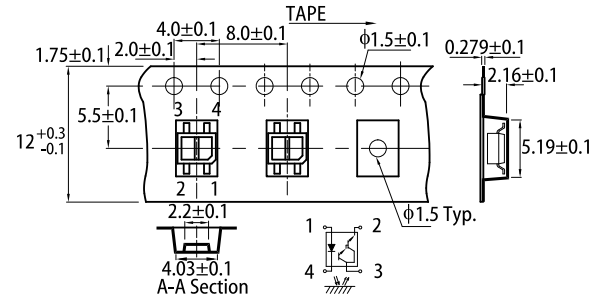


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

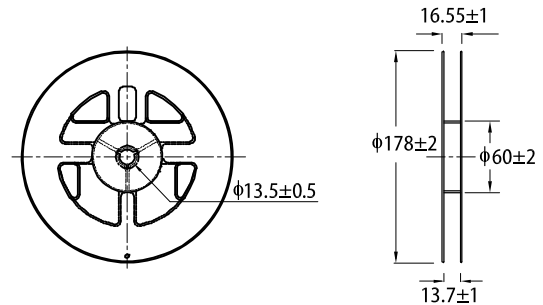


- Notes:
- Don't cause stress to the LEDs while it is exposed to high temperature.
 - The maximum number of reflow soldering passes is 2 times.
 - Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS

