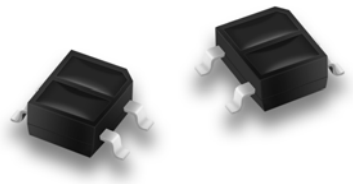
Kingbright

ATIR0711S-F

Photointerrupter - Reflective Type



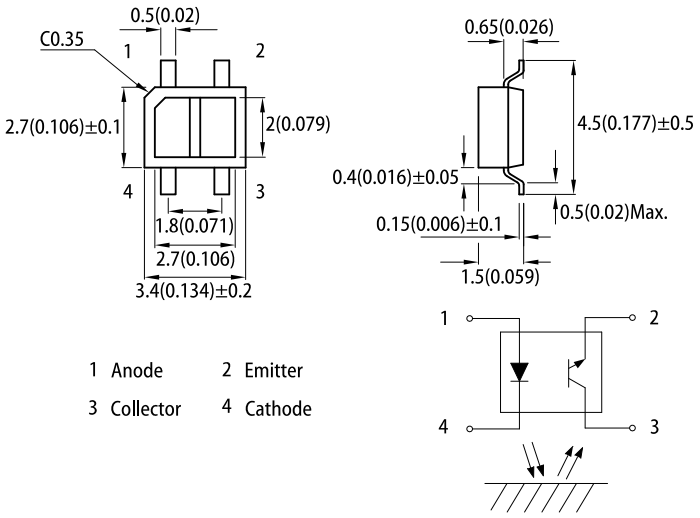
FEATURES

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

APPLICATIONS

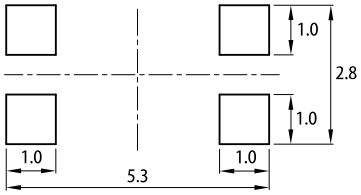
- Cassette tape recorders, VCRs
- Floppy disk drives
- Various microcomputerized control equipment

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



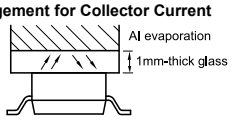
Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted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

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter			Symbol	Value			Unit	Test Conditions
				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	100	-	250	μA	I_F=4mA,V_{CE}=2V
	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°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 ≤100μs, 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	°C
Storage Temperature		T_{stg}	-40~+100	°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

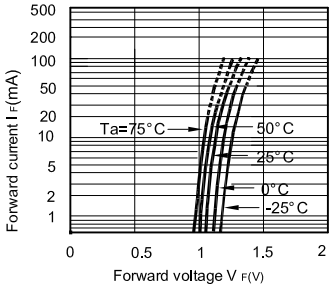


Fig. 2 Collector Current vs. Forward Current

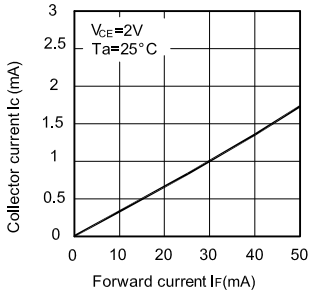


Fig. 3 Collector Current vs. Collector-Emitter Voltage

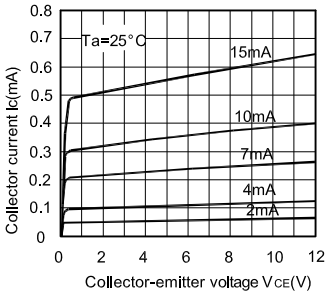


Fig. 4 Relative Collector Current vs. Ambient Temperature

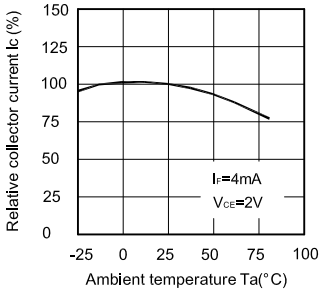


Fig. 5 Response Time vs. Load Resistance

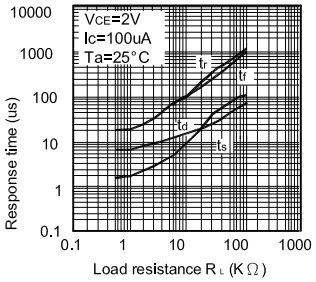


Fig. 6 Collector Dark Current vs. Ambient Temperature

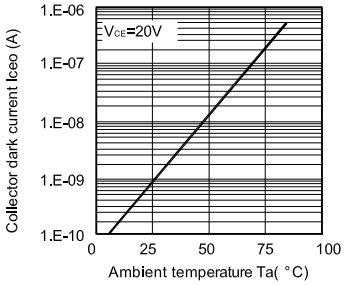
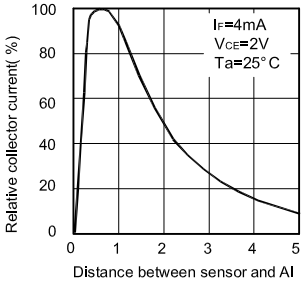


Fig. 7 Relative Collector Current vs. Distance Between Sensor And Al Evaporation Glass



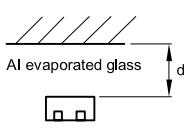
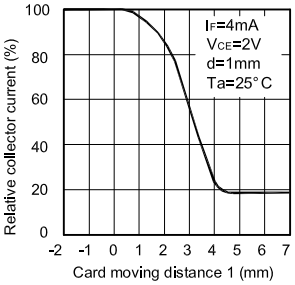


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)



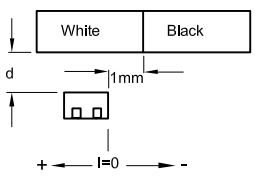
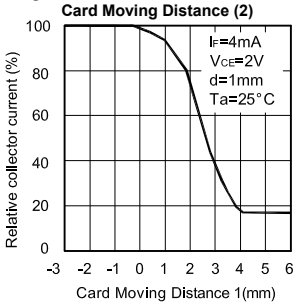
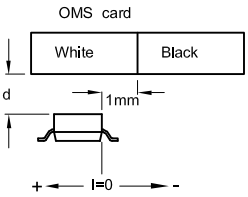
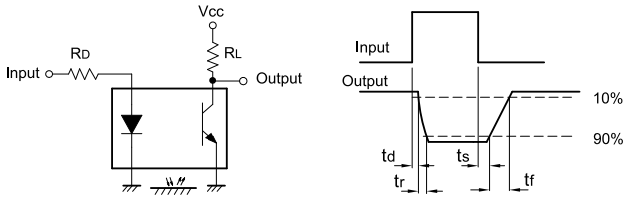


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)

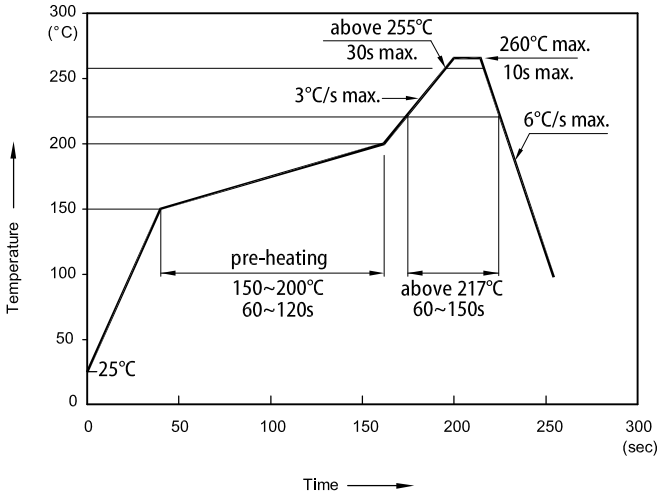




Test Circuit for Response Time

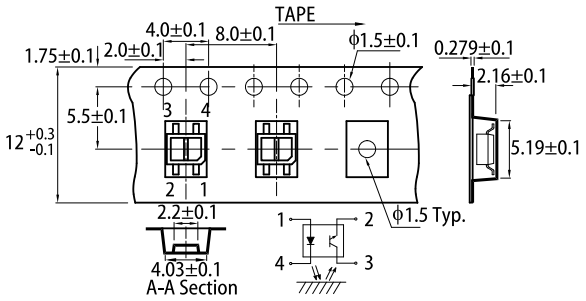


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

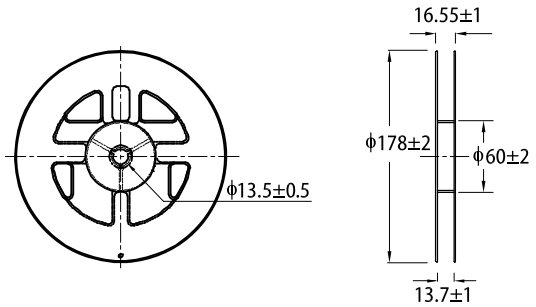


Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
2. The maximum number of reflow soldering passes is 2 times.
3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS