

Phototransistors

Order code	Manufacturer code	Description
58-0934	n/a	KTIR0811S PHOTO INTERRUPTER (RC)

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The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

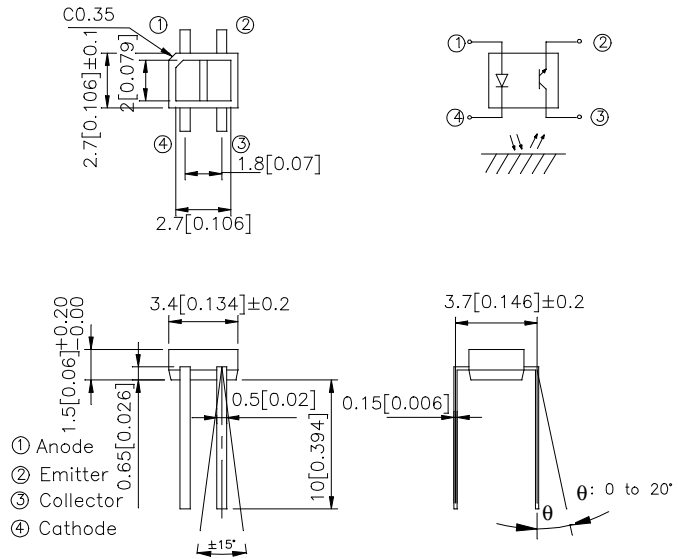
SUBMINIATURE, HIGH SENSITIVITY PHOTOINTERRUPTER

*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.



UNIT : MM[INCH]
 TOLERANCE : ± 0.25[±0.01] UNLESS OTHERWISE NOTED.

*Absolute Maximum Ratings(Ta=25 °C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I _F	50	mA
	Reverse voltage	V _R	6	V
	Power dissipation	P	75	mW
Output	Collector power dissipation	P _C	75	mW
	Collector current	I _C	20	mA
	Collector-emitter voltage	V _{CEO}	35	V
	Emitter-collector voltage	V _{ECC}	6	V
Operating temperature		T _{opr}	-25~+85	°C
Storage temperature		T _{stg}	-40~+100	°C
Soldering temperature (1/16 inch from body for 5 seconds)		T _{sol}	260	°C

■ Electro-optical Characteristics

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	μA
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	μA
	*2 Leak Current	I_{LEAK}	$V_{CE}=2\text{V}, I_F=4\text{mA}$	—	—	0.1	μA
	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	μSec

*1 The condition and arrangement of the reflective object are shown below.

*2 Without reflective object.

BIN CODE	I_C (μA)
E	10-120
F	100-250
G	200-400

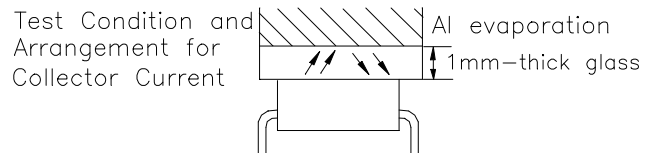


Fig. 1 Forward Current vs. Forward Voltage

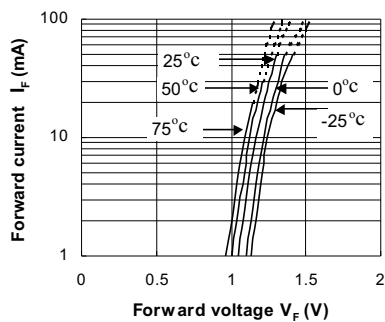


Fig. 2 Collector Current vs. Forward Current

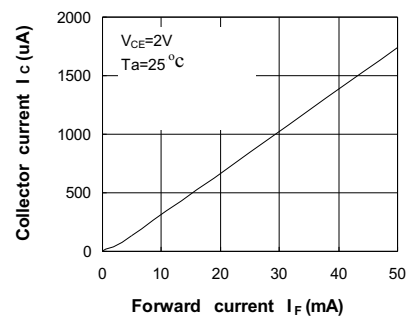


Fig. 3 Collector Current vs. Collector-emitter Voltage

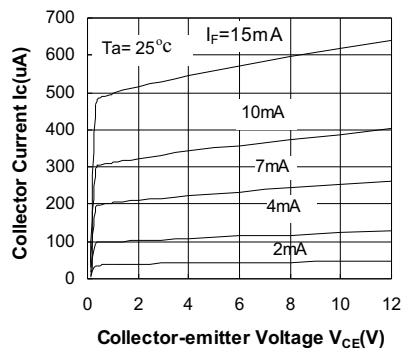


Fig. 4 Relative Collector Current vs. Ambient Temperature

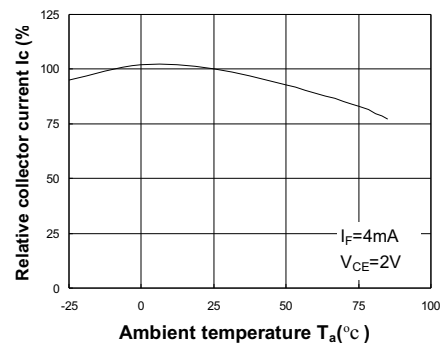
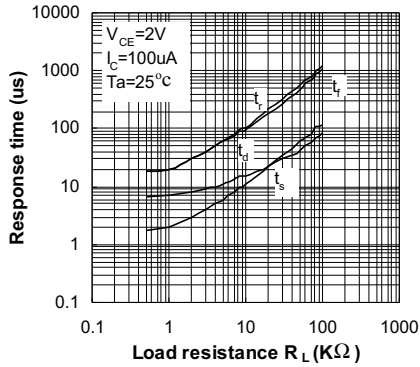


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

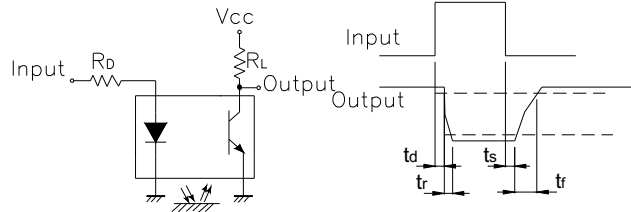


Fig. 6 Collector Dark Current vs. Ambient Temperature

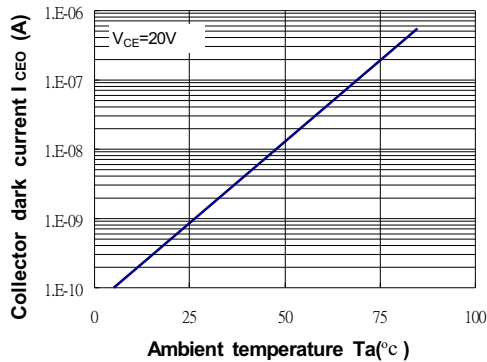


Fig. 7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

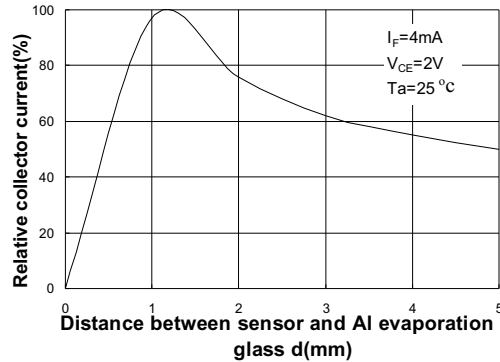


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

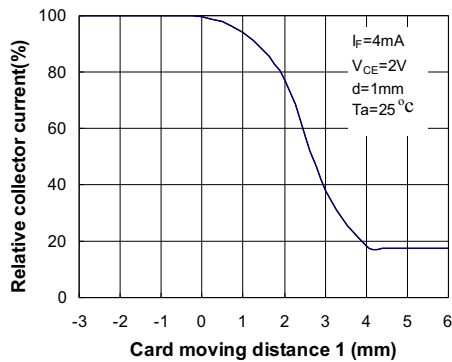
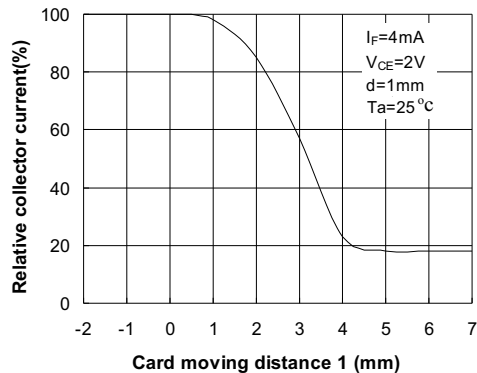
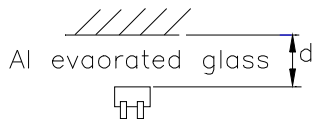


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



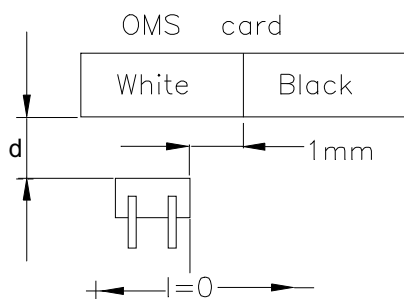
Test Condition for Distance & Detecting Position Characteristics

Correpond to Fig. 7



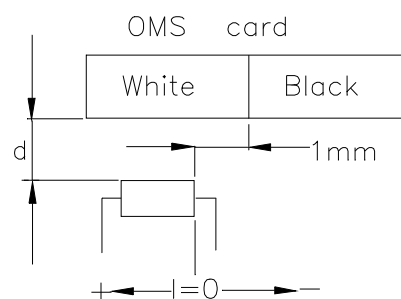
Correpond to Fig. 8
Test condition

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



Correpond to Fig. 9
Test condition

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



Wave Soldering Profile

