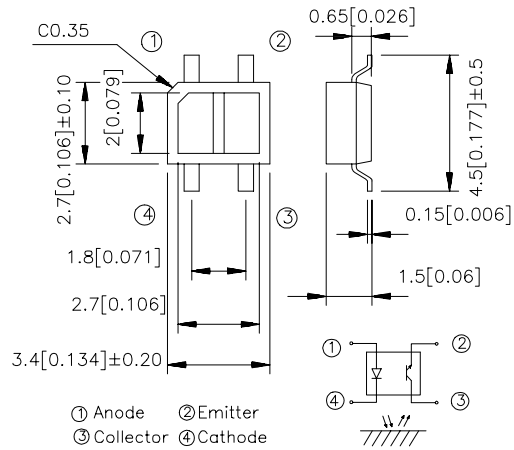# Kingbright

KTIR0711S

Features

- Compact and thin
- Visible light cut-of f type
- High sensitivity

Applications

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

Package Dimensions

C0.35
0.65[0.026]
2.7[0.106]±0.10
2[0.079]
4.5[0.177]±0.5
0.15[0.006]
1.8[0.071]
1.5[0.06]
2.7[0.106]
3.4[0.134]±0.20

① Anode ② Emitter
③ Collector ④ Cathode

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subject to change without notice.

Absolute Maximum Ratings (T$_a$=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V_{CEO}	30	V
	Emitter-collector voltage	V_{ECO}	5	V
	Collector current	I_C	20	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		Topr	-25~+85	°C
Storage temperature		Tstg	-40~+100	°C
Soldering temperature(1/16 inch from body for 5 seconds)		Tsol	260	°C

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Electro-optical Characteristics (T$_a$=25°C)

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage	V_F	I_F=20mA	—	1.2	1.5	V
	Reverse current	I_R	V_R=5V	—	—	10	µA
Output	Collector dark current	I_{CEO}	V_{CE}=20V	—	10^{-9}	10^{-7}	A
Transfer characteristics	[*1]Collector current	I_c	V_{CE}=2V,I_F=4mA	—	100	—	µA
	[*2]Leak current	I_{LEAK}	V_{CE}=2V,I_F=4mA	—	—	0.1	µA
	Response time — Rise time	t_r	V_{CE}=2V,I_C=100uA R_L=1KΩ,d=1mm	—	20	100	µsec
	Response time — Fall time	t_f		—	20	100	µsec

[*1] The condition and arrangment of the reflective object are shown below
[*2] Without reflective object

Test Condition and Arrangement for Collector Current

Al evaporation
1mm—thick glass
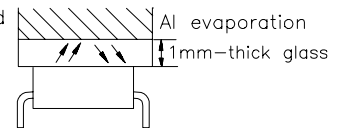
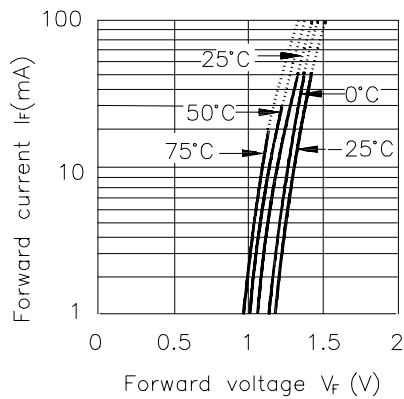### Fig.1 Forward Current vs. Forward Voltage

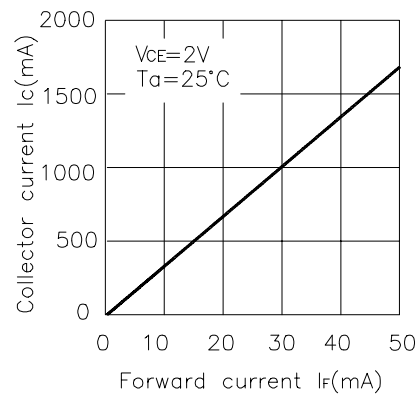### Fig.2 Collector Current vs. Forward Current

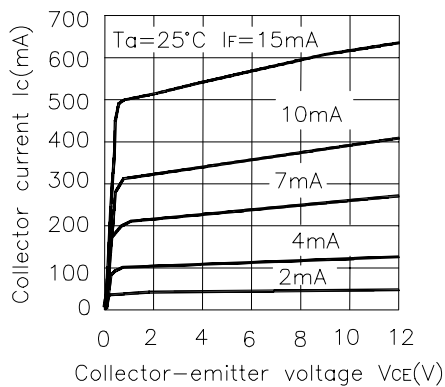

Fig.3 Collector Current vs. Collector-emitter Voltage

Fig.4 Relative Collector Current vs. Ambient Temperature
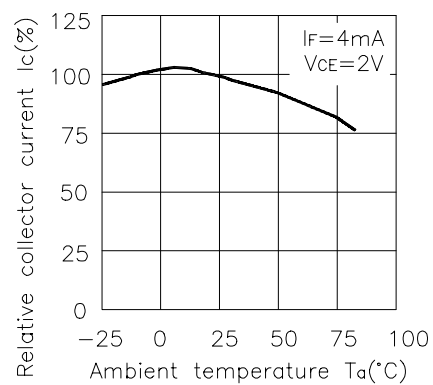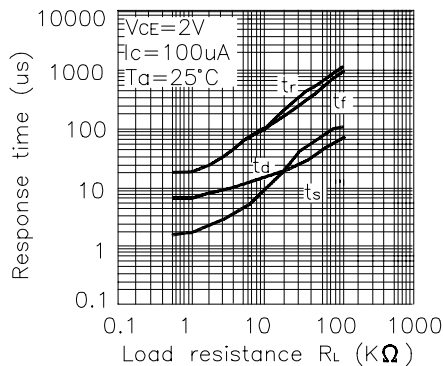
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Fig.5 Response Time vs. Load Resistance

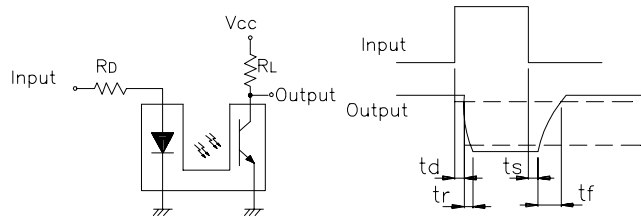## Test Circuit for Response Time

Fig.6 Collector Dark Current vs. Ambient Temperature
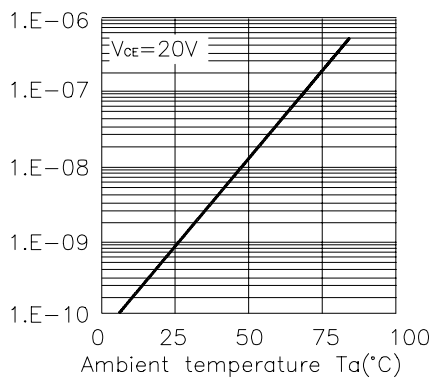

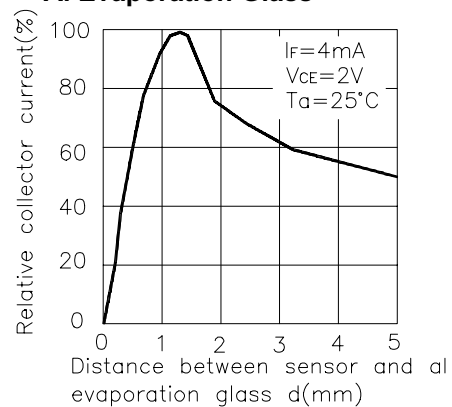## Fig.7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

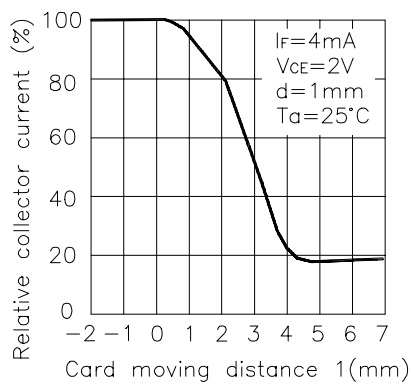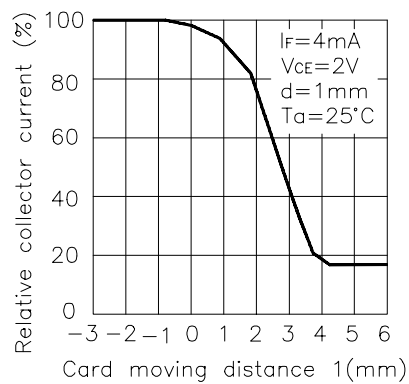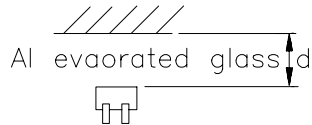## Fig.8 Relative Collector Current vs. Card Moving Distance (1)

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

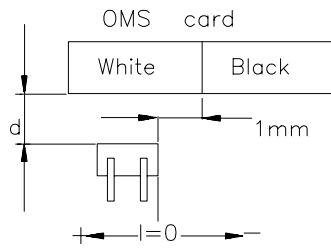# Kingbright

**The Condition for Distance&Detecting
Position Characteristics**

Correpond to Fig.7

Al evaorated glass | d

**Correpond to Fig.8
Test condition**

$I_F = 4mA$

$V_{CE} = 2V$

$d = 1mm$

OMS card

White	Black

1mm

d

+ ———I=0———→ —

**Correpond to Fig.9
Test condition**

$I_F = 4mA$

$V_{CE} = 2V$

$d = 1mm$

OMS card

White	Black

1mm

d

+ ———I=0———→ —