Part Number: KTIR0821DS

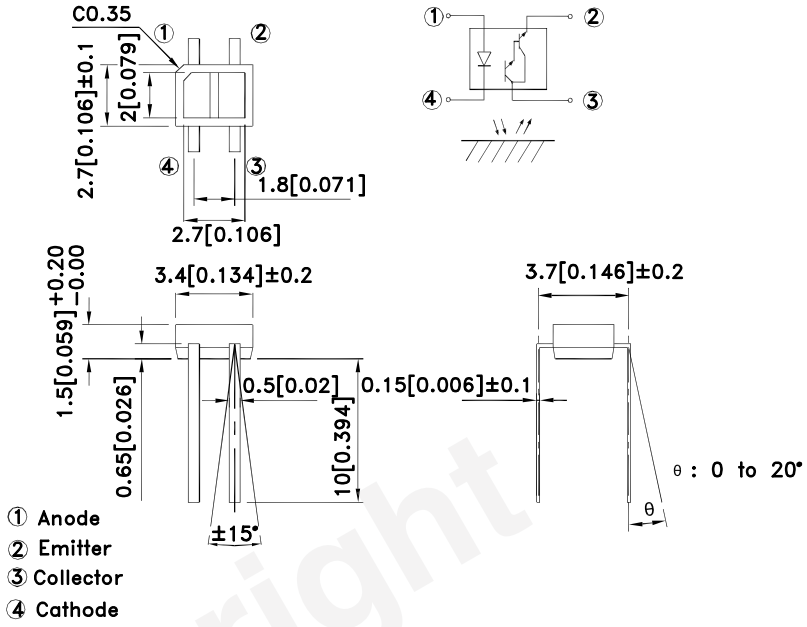
***Features**

- ●Compact and thin
- ●Visible light cut-off type
- ●High sensitivity
- ●RoHS Compliant.

***Applications**

- ●Cassette tape recorders, VCRs
- ●Floppy disk drives
- ●Various microcosm puterized control equipment

Package Dimensions



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 leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

***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	Pd	75	mW
	Peak Forward Current (Pulse Width ≤100uS, 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		Topr	-25~+85	ºC
Storage temperature		Tstg	-40~+100	ºC
soldering temperature (1/16 inch from body for 5 seconds)		Tsol	260	ºC

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 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.

Electro-optical Characteristics (Ta=25°C)

Parameter			Symbol	Conditions	Min.	TYP.	Max.	Unit
Input	Forward Voltage		V_F	I_F=20mA	1.0	1.2	1.5	V
	Reverse Current		I_R	V_R=6V	-	-	10	μA
	Peak Wavelength		λP	I_F=20mA	-	940	-	nm
Output	Collector Dark Current		I_{CEO}	V_{CE}=10V I_F=0mA	-		10^{-6}	A
Transfer charact-eristics	*1 Collector Current		I_C	V_{CE}=2V I_F=4mA	-	3	-	mA
	*2 Leak Current		I_{LEAK}	V_{CE}=5V I_F=4mA	-	-	5	μA
	Response time	Rise time	tr	V_{CE}=2V I_C=10mA R_L=100Ω,d=1mm	-	80	400	μsec
		Fall time	tf		-	70	400	μsec

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

*2 Without reflective object

*3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light deg radation or premature failure.

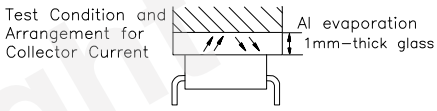


Fig. 1 Forward Current vs. Forward Voltage

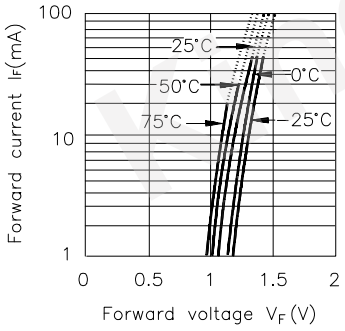


Fig. 2 Collector Current vs. Forward Current

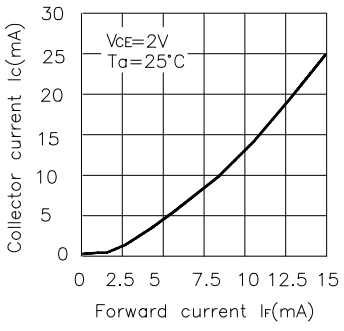


Fig. 3 Collector Current vs. Collector-emitter Voltage

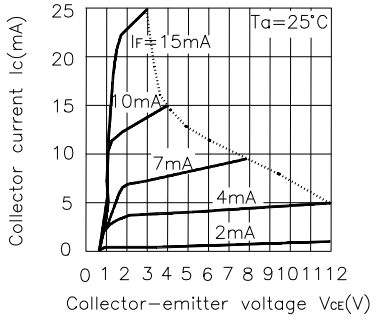


Fig. 4 Relative Collector Current vs. Ambient Temperature

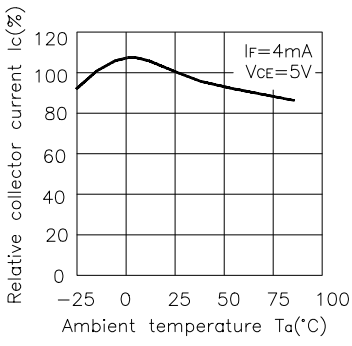
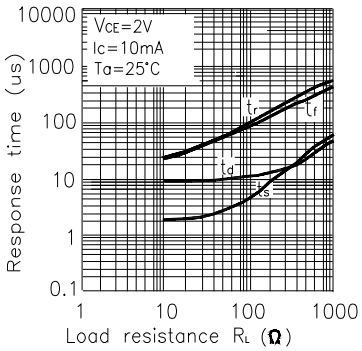


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

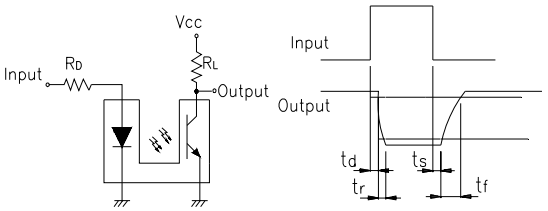


Fig. 6 Collector Dark Current vs. Ambient Temperature

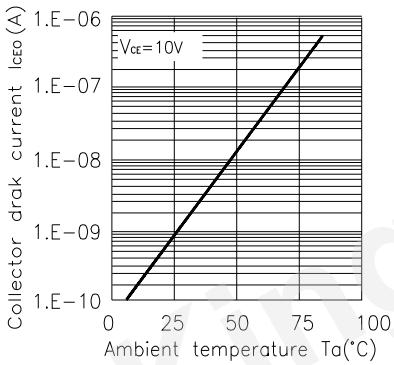


Fig. 7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Glass

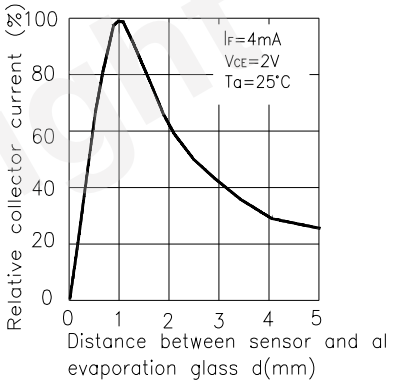


Fig. 8 Relative Collector Current vs. Card Moving Distance (1)

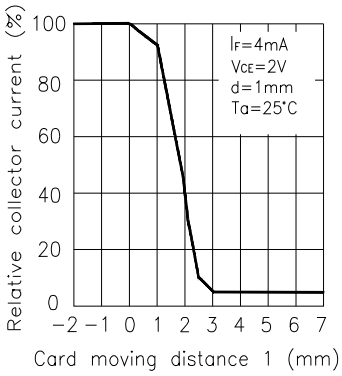
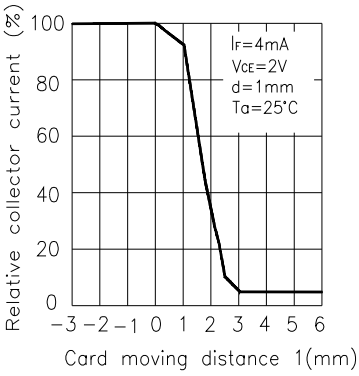
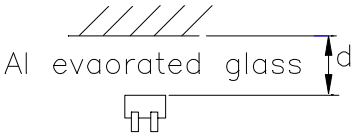


Fig. 9 Relative Collector Current vs. Card Moving Distance (2)



Test Condition for Distance &Detecting PositionCharacteristics

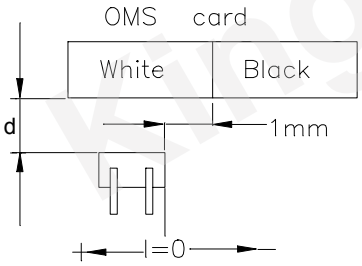
Correpond to Fig. 7



Correpond to Fig. 8

Test condition

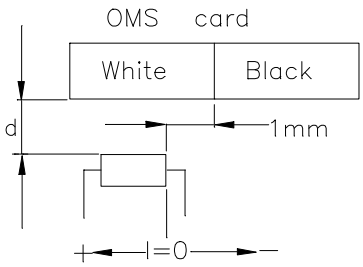
I_F=4mA
V_{CE}=2V
d=1mm

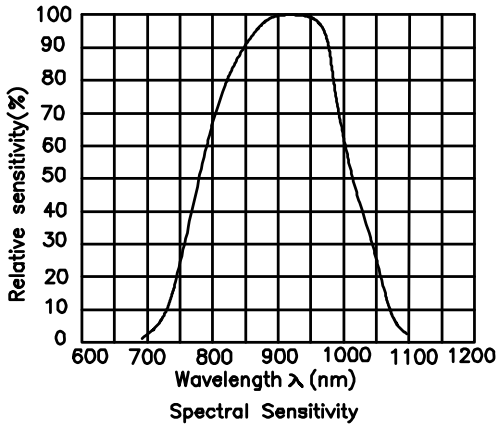


Correpond to Fig. 9

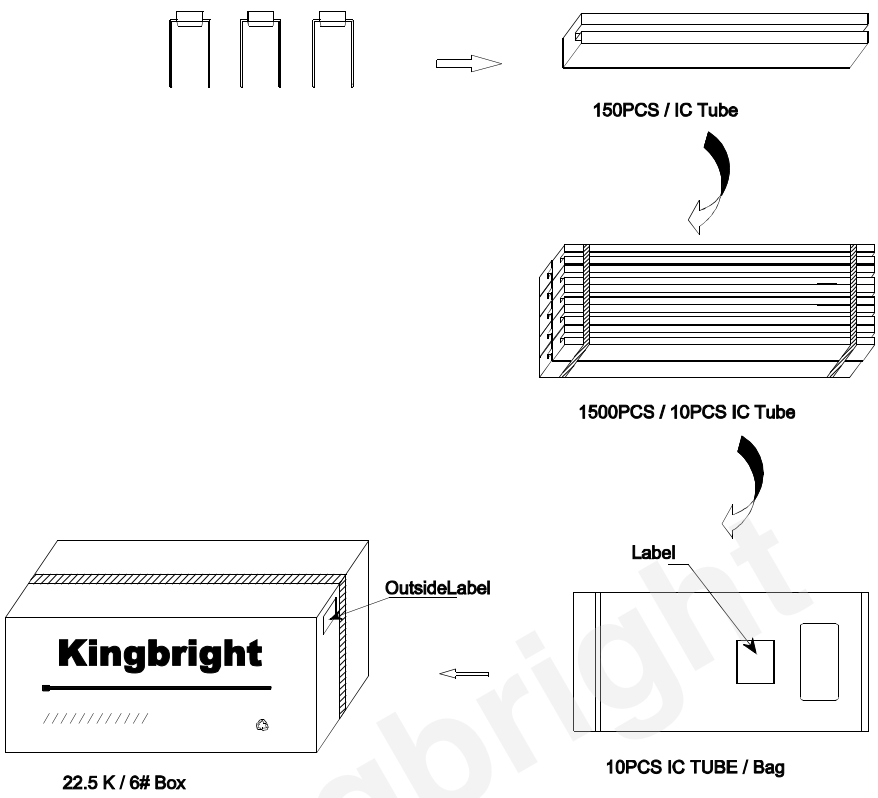
Test condition

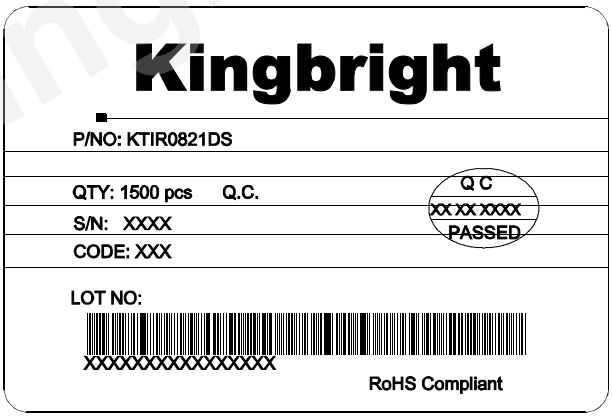
I_F=4mA
V_{CE}=2V
d=1mm





PACKING & LABEL SPECIFICATIONS **KTIR0821DS**





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