

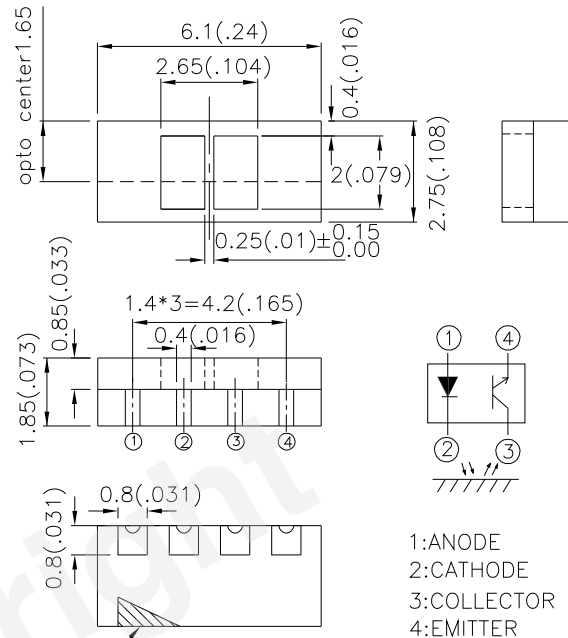
SUBMINIATURE , HIGH SENSITIVITY PHOTOINTERRUPTER

*Features

- 1.Compact and thin.
- 2.Visible light cut-off type.
- 3.High sensitivity.
- 4.Side irradiance.
- 5.Package: 3000pcs/Reel.
- 6.Moisture sensitivity level : level 4.
- 7.New PCB Production Process.
- 8.RoHS compliant.

*Applications

Cassette tape recorders,VCRs toys.
Various microcomputerized control equipment.



UNIT : MM[INCH]
TOLERANCE : $\pm 0.25[\pm 0.01]$ UNLESS OTHERWISE NOTED.

*Absolute Maximum Ratings (TA=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	IF	30	mA
	Reverse Voltage	VR	5	V
	Power Dissipation	Pd	37.5	mW
	Peak Forward Current (Pulse Width $\leq 100\mu\text{S}$, Duty Cycle=1%)	IFP	1	A
Output	Collector-emitter voltage	VCEO	30	V
	Emitter-Collector voltage	VECO	5	V
	Collector current	IC	20	mA
	Collector Power Dissipation	PC	75	mW
Operating temperature		Topr	-25~+50	°C
Storage temperature		Tstg	-25~+50	°C
Soldering temperature (1/16 inch from body for 5 seconds)		Tsol	260	°C



Electrical / Optical Characteristics at TA=25°C

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	$V_R=5\text{V}$	-	-	10	μA
	Peak Wavelength	λ_p	$I_F=20\text{mA}$	-	940	-	nm
Output	Collector dark current	I_{CEO}	$V_{CE}=20\text{V}$	-	10^{-9}	10^{-7}	A
Viewing Angle		θ	-	-	90	-	°
Transfer Characteristics	Collector-emitter saturation voltage	$V_{CE(SAT)}$	$I_C=0.1\text{mA}$, $I_F=20\text{mA}$	-	0.1	0.4	V
	Collector current [1]	I_C	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$	10	-	300	μA
	Leak current [2]	I_{LEAK}	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$	-	-	5	μA
	Response time	Rise time	T_R	$V_{CE}=2\text{V}$, $I_C=100\mu\text{A}$	-	20	-
Fall time		T_F	$R_L=1\text{K}\Omega$ $d=3.8\text{mm}$	-	20	-	μs

Notes:

- The condition and arrangement of the reflective object are shown below. Fig.1, Fig.2, Fig.3, Fig.4, Fig.5 and Fig.9 in the same condition.
- Without reflective object.

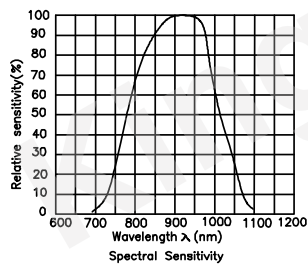
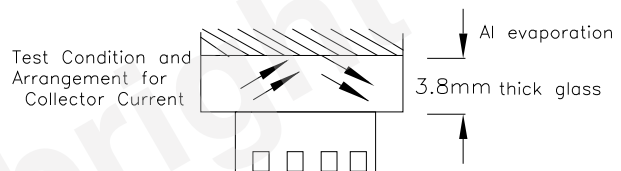


Fig.1 Forward Current Vs. Forward Voltage

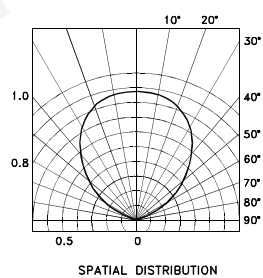
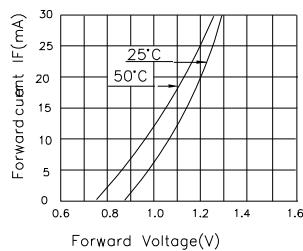


Fig.2 Collector Current Vs. Forward Current

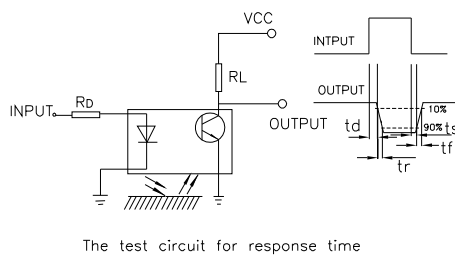
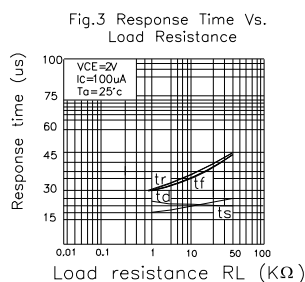


Fig.4 Relative Collector Current Vs. Ambient Temperature

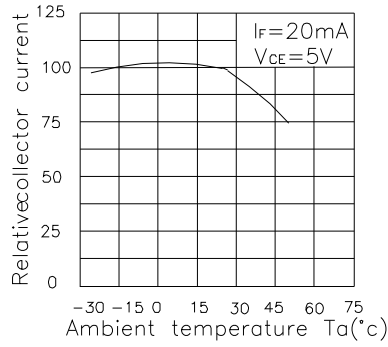
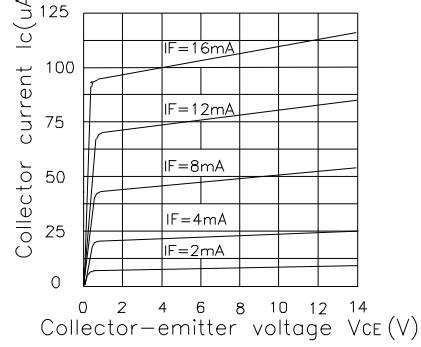
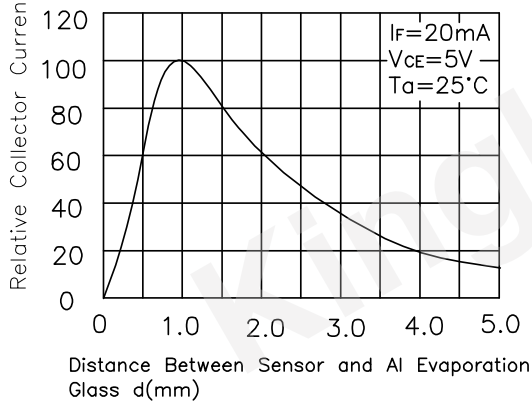


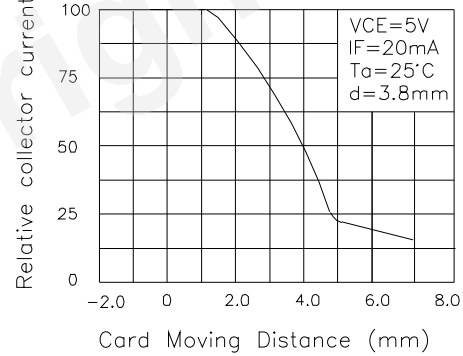
Fig.5 Collector Current Vs. Collector-Emitter Voltage



*Fig.6 Relative Collector Current Vs. Distance Between Sensor and Al Evaporation Glass



*Fig.7 Relative Collector Current Vs Card Moving Distance (1)



*Fig.8 Relative Collector Current Vs. Card Moving Distance (2)

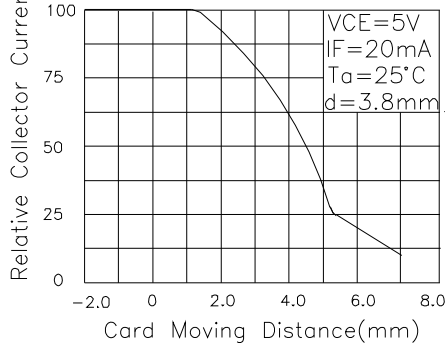
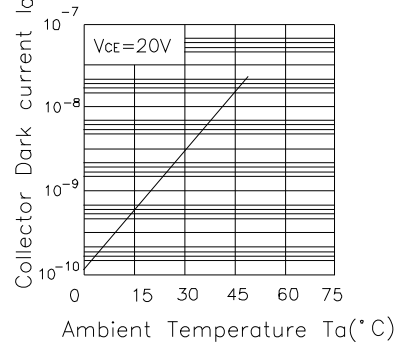
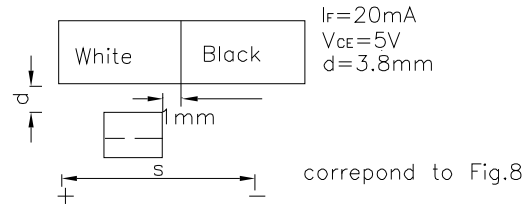
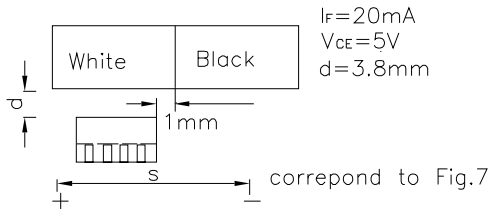
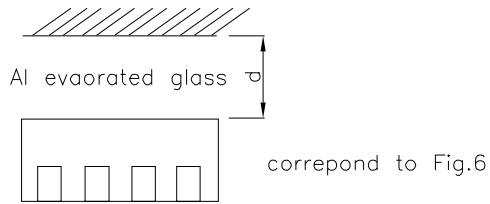


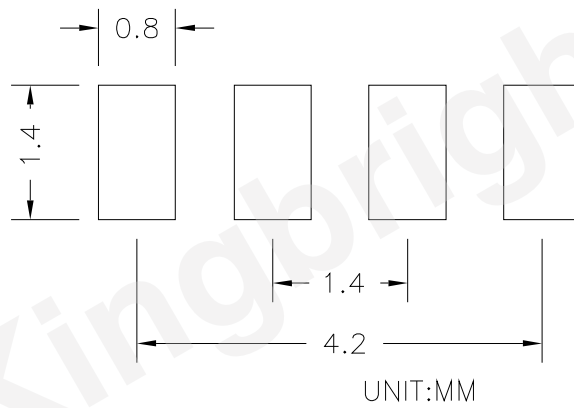
Fig.9 Collector Dark Current Vs. Ambient Temperature



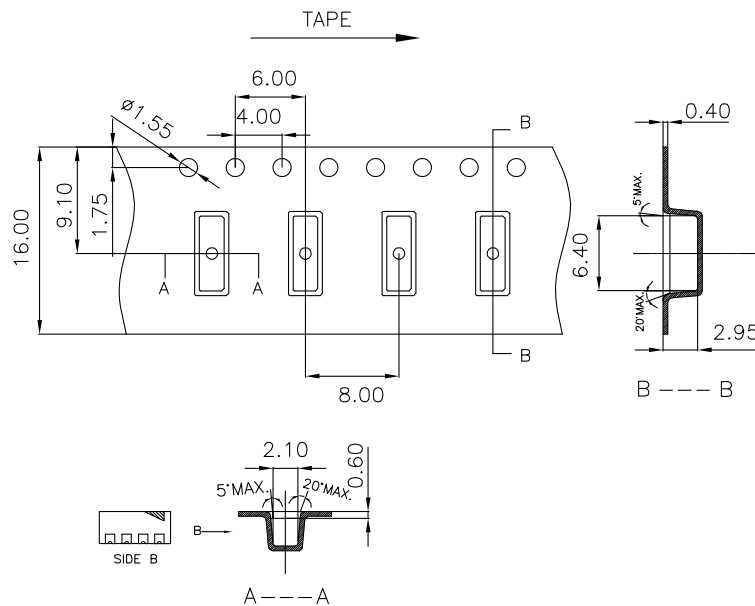
*Note:Test condition for distance



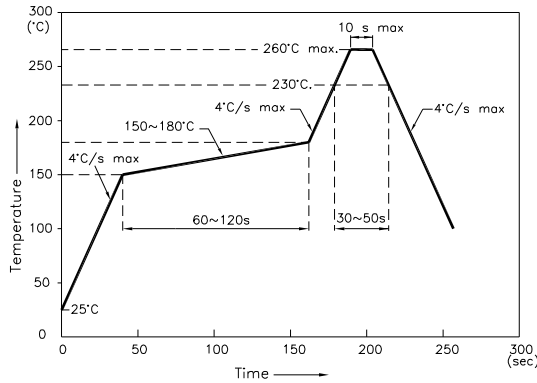
RECOMMENDED SOLDERING PATTERN



Tape Specifications (Units : mm)



Reflow Soldering Profile For Lead-free SMT Process.

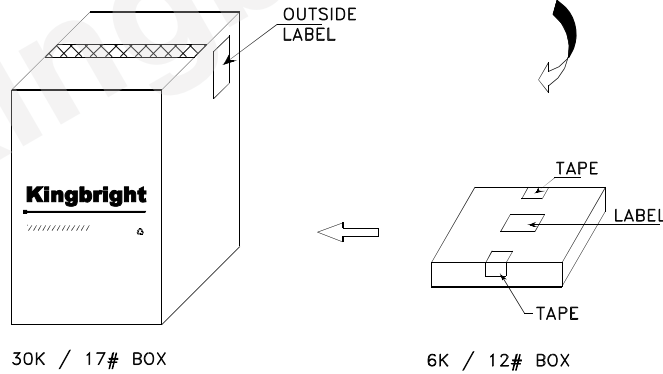
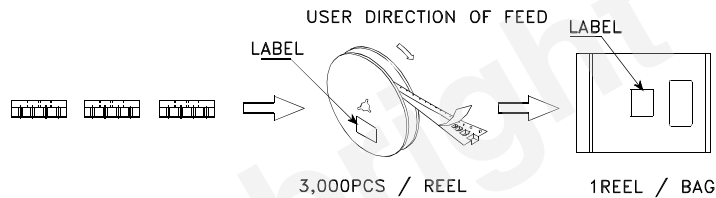



NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

PACKING & LABEL SPECIFICATIONS

KRC011



Kingbright	
P/NO: KRCxxx	
QTY: 3,000 pcs	Q.C. Q C xx xx xxxx PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	

Detailed application notes are listed on our website.
http://www.kingbright.com/application_notes