

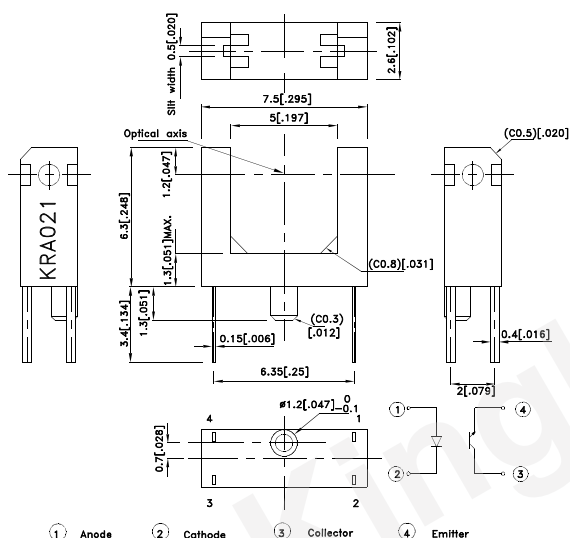
PRELIMINARY SPEC

*Application

- 1.Copiers,printers and Fax Machines.
- 2.VCRs and CD players.
- 3.Various position detection sensor.

*Dimensions

Note:All units are in millimeters unless otherwise indicated.



Unless otherwise, the tolerances are $\pm 0.15\text{mm}$.

*Features

- 1.Compact package.
- 2.High sensing accuracy(Slit width:0.5mm).
- 3.Printed wiring board direct mounting type(with a locating pin).
- 3.Gap between light emitter and detector:5mm.
- 4.Compliant with European RoHS directives.
- 5.RoHS compliant.

*Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Input	Forward current[1]	I_F	30	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P_d	35	mW
	Peak Forward Current [2]	I_{FP}	100	mA
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	5	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		T_{opr}	$-30\sim+85$	$^\circ\text{C}$
Storage temperature		T_{stg}	$-40\sim+100$	$^\circ\text{C}$
Soldering temperature(5s) [3]		T_{sol}	260	$^\circ\text{C}$

Notes:

- 1.Refer to the temperature rating chart if the ambient temperature exceeds 25°C .
- 2.Duty:1/100,Pulse Width:0.1mS.
- 3.At the location of 1.5mm from the package bottom.

*Electrical / Optical Characteristics at $T_A=25^\circ\text{C}$

Parameter		Symbol	Value			Conditions
			Min.	Typ.	Max.	
Input	Forward voltage	V_F	-	1.15V	1.40V	$I_F=10\text{mA}$
	Reverse current	I_R	-	-	$10\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	λ_p	-	940nm	-	-
Output	Collector current	I_C/I_F	2.5%	-	50%	$I_F=10\text{mA}, V_{CE}=2\text{V}$
	Collector dark current	I_D	-	-	100nA	$V_{CE}=24\text{V}, I_F=0$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.1V	0.4V	$I_C=0.25\text{mA}, I_F=20\text{mA}$
	Peak spectral sensitivity wavelength	λ_p	-	920nm	-	-
Rise time		t_r	-	$15\mu\text{sec}$	$50\mu\text{sec}$	$V_{CC}=5\text{V}, R_L=1\text{K}\Omega, I_C=1\text{mA}$
Fall time		t_f	-	$15\mu\text{sec}$	$50\mu\text{sec}$	



Fig.1 Forward Current vs. Forward Voltage

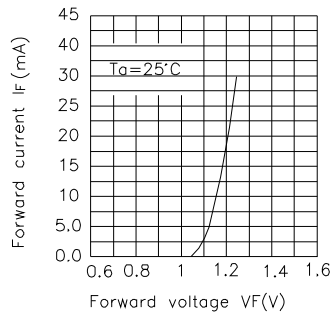


Fig.2 Collector Current vs. Forward Current

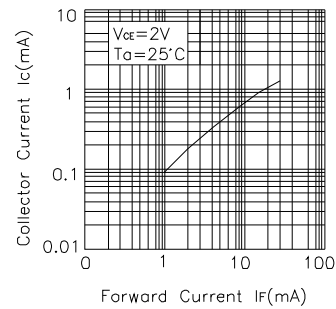


Fig.3 Collector Current vs. Ambient Temperature

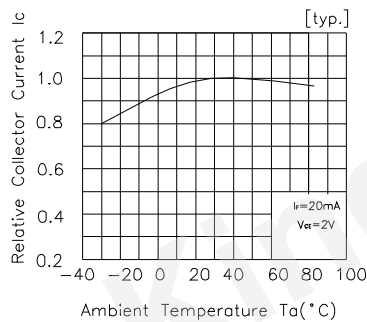


Fig.4 Collector-Emitter Saturation Voltage vs. Ambient Temperature

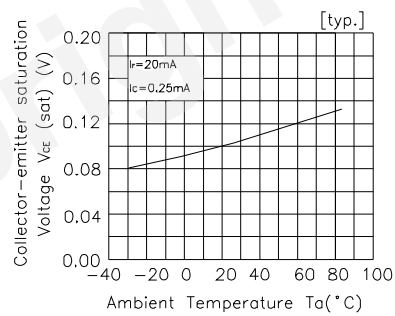


Fig.5 Forward Current vs. Collector Dissipation Temperature Rating

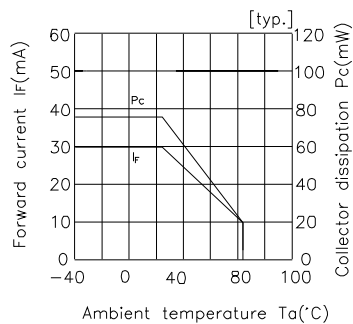


Fig.6 Forward Current vs. Collector-Emitter Voltage

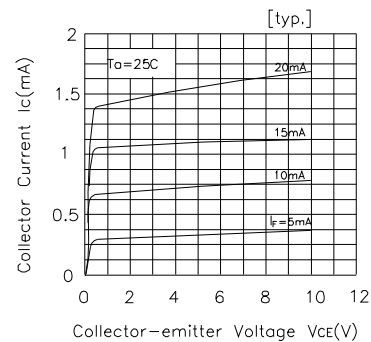


Fig.7 Relative Collector Current vs. Shield Distance(1)

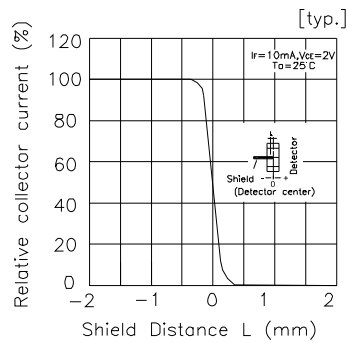


Fig.8 Relative Collector Current vs. Shield Distance(2)

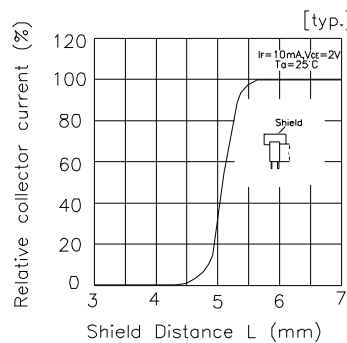
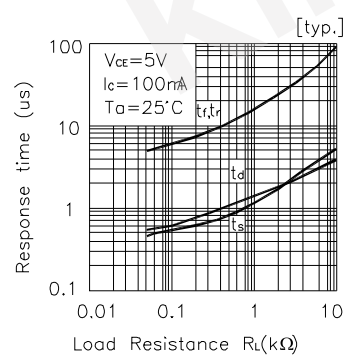
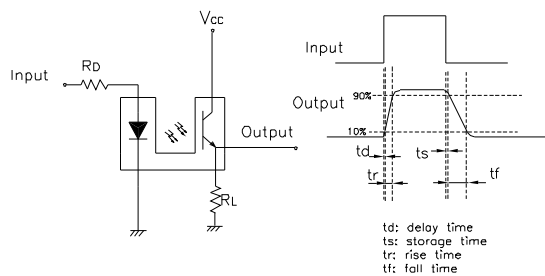


Fig.9 Response Time vs Load Resistance

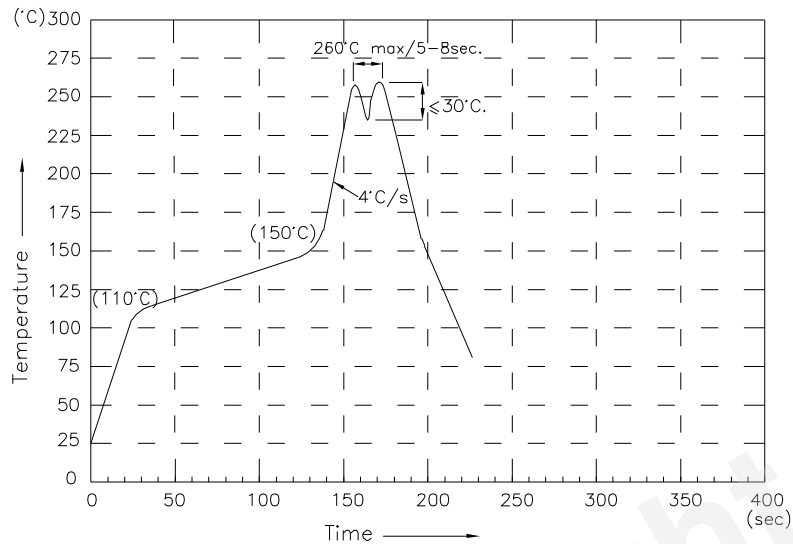


Test Circuit for Response Time



KRA021

Wave Soldering Profile For Lead-free Through-hole LED.

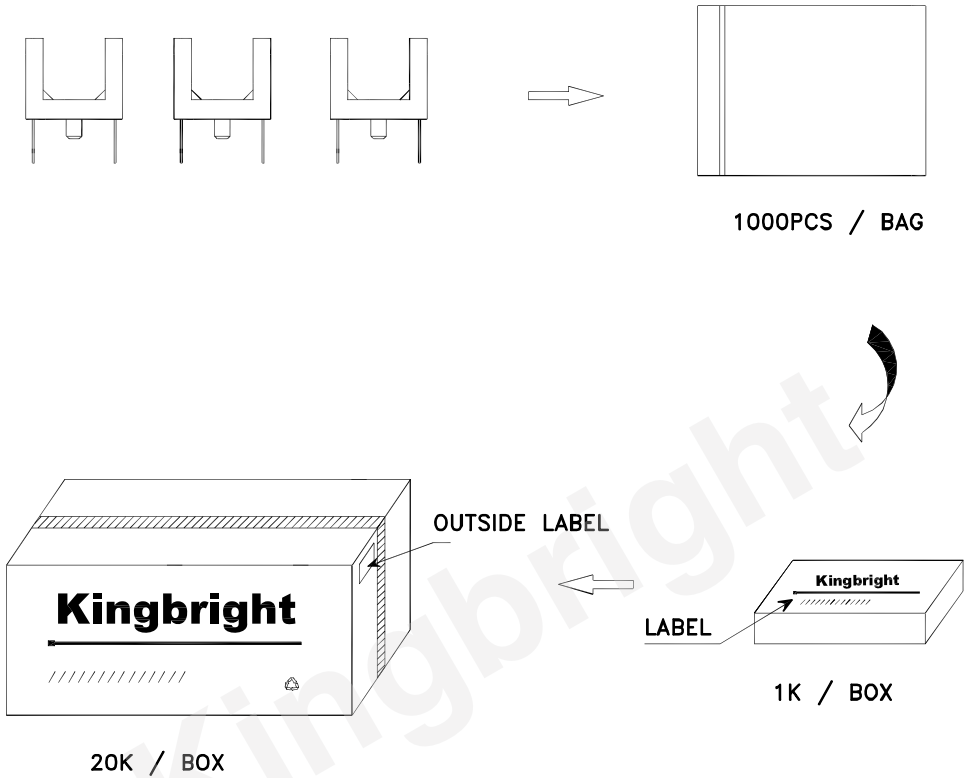



NOTES:

1. Recommend the wave temperature 245°C~260°C. The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85 degree°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. No more than once.

PACKING & LABEL SPECIFICATIONS

KRA021



Kingbright	
P/NO: KRA021	
QTY: 1000 pcs	Q.C.
S/N: XXXX	<div>Q C XX XX XXXX PASSED</div>
CODE: XXX	
LOT NO:	
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	