

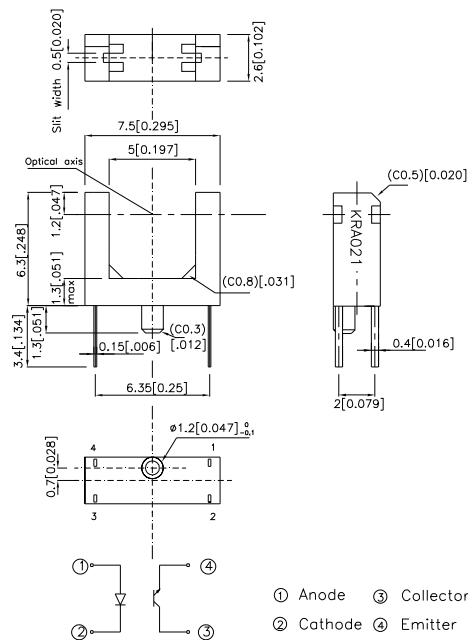
PRELIMINARY SPEC

*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

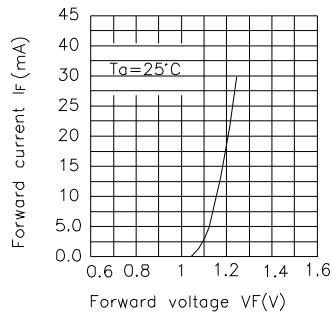


Fig.2 Collector Current vs. Forward Current

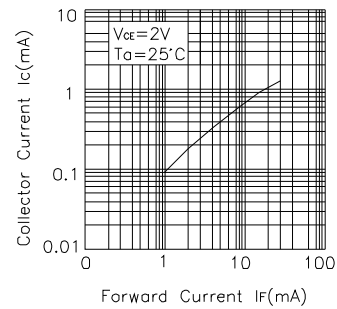


Fig.3 Collector Current vs. Ambient Temperature

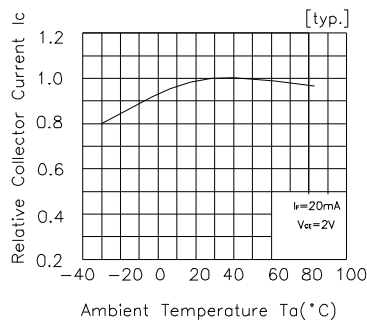


Fig.4 Collector-Emitter Saturation Voltage vs. Ambient Temperature

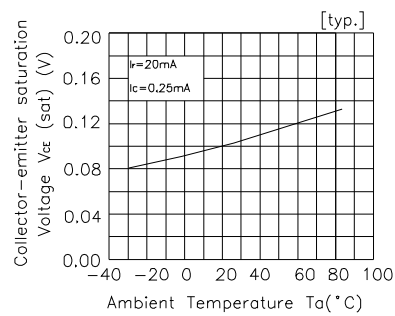


Fig.5 Forward Current vs. Collector Dissipation Temperature Rating

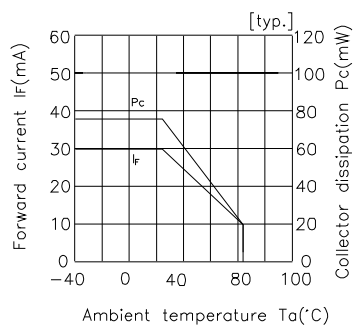


Fig.6 Forward Current vs. Collector-Emitter Voltage

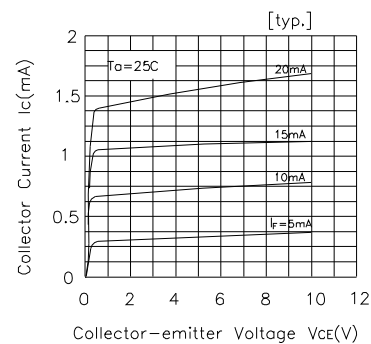


Fig.7 Relative Collector Current vs. Shield Distance(1)

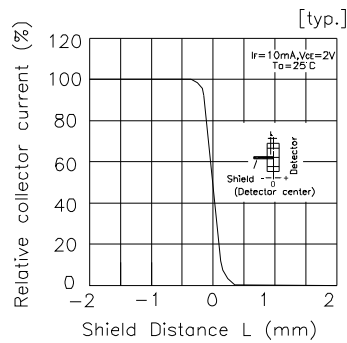


Fig.8 Relative Collector Current vs. Shield Distance(2)

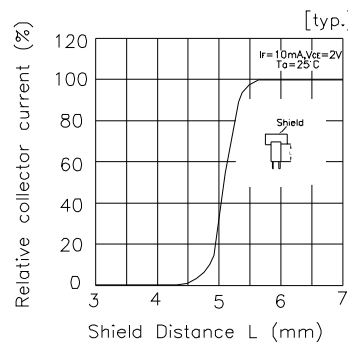
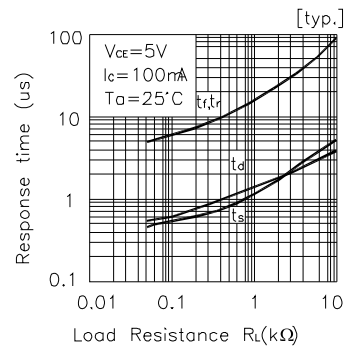
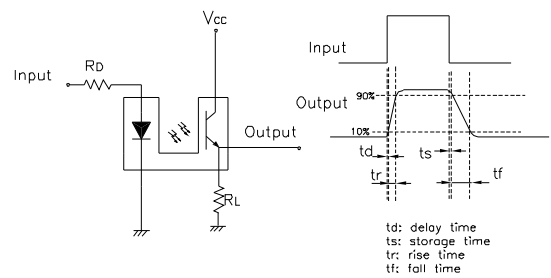
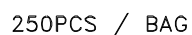


Fig.9 Response Time vs Load Resistance



Test Circuit for Response Time



KRA021

RoHS Compliant