Kingbright

Part Number: KRA021

*Application

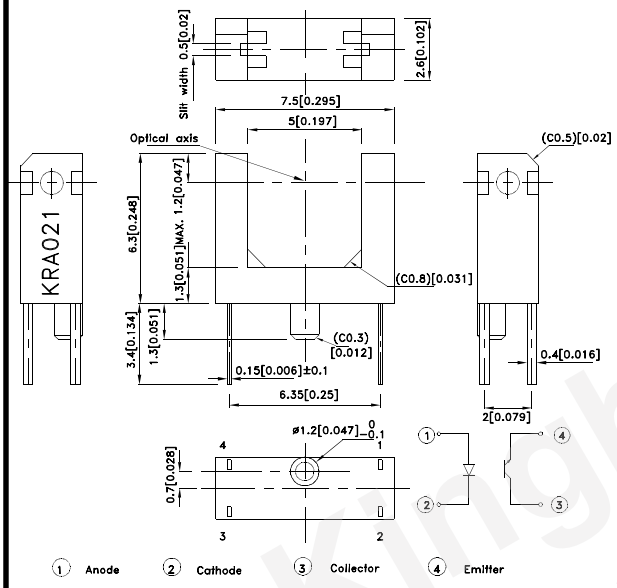
1.Copiers,printers and Fax Machines.
2.VCRs and CD players.
3.Various position detection sensor.

*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.Housing UL rating:94V-0.
6.RoHS compliant.

*Dimensions

Note:All units are in millimeters unless otherwise indicated.



Unless otherwise.,the tolerances are ±0.15mm.

*Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current[1]	IF	30	mA
	Reverse voltage	VR	5	V
	Power dissipation	Pd	35	mW
	Peak Forward Current [2]	IFP	100	mA
Output	Collector-emitter voltage	VCEO	35	V
	Emitter-collector voltage	VECO	5	V
	Collector current	IC	50	mA
	Collector power dissipation	PC	75	mW
Operating temperature		Topr	-30~+85	°C
Storage temperature		Tstg	-40~+100	°C
Soldering temperature(5s) [3]		Tsol	260	°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 TA=25°C

Parameter		Symbol	Value			Conditions
			Min.	Typ.	Max.	
Input	Forward voltage	VF	-	1.15V	1.40V	IF=10mA
	Reverse current	IR	-	-	10μA	VR=5V
	Peak Wavelength	λp	-	940nm	-	-
Output	Collector current	IC/IF	2.5%	-	50%	IF=10mA,VCE=2V
	Collector dark current	ID	-	-	100nA	VCE =24V, IF=0
	Cullector-emitter saturation voltage	VCE(sat)	-	0.1V	0.4V	IC=0.25mA, IF=20mA
	Peak spectral sensitivity wavelength	λp	-	920nm	-	-
Rise time		tr	-	15μsec	50μsec	VCC=5V, RL=1KΩ IC=1mA
Fall time		tf	-	15μsec	50μsec	

Fig.1 Forward Current vs. Forward Voltage

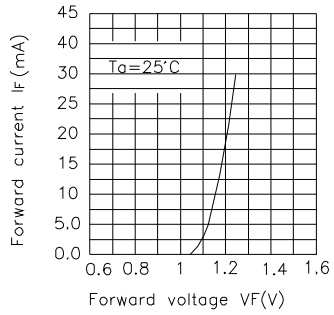


Fig.2 Collector Current vs. Forward Current

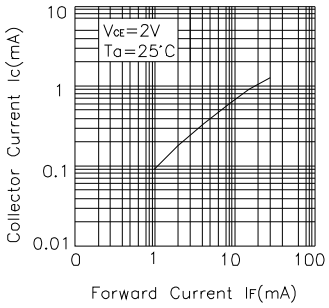


Fig.3 Collector Current vs. Ambient Temperature

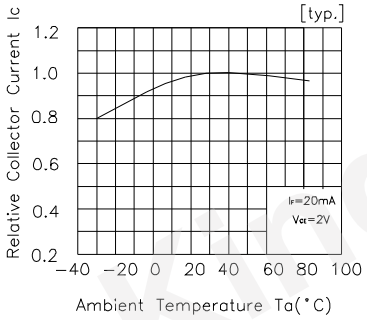


Fig.4 Collector−Emitter Saturation Voltage vs.Ambient Temperature

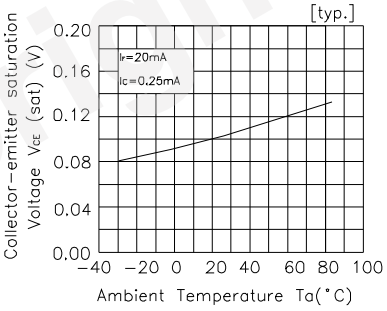


Fig.5 Forward Current vs. Collector Dissipation Temperature Rating

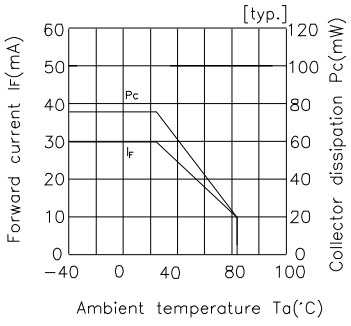


Fig.6 Forward Current vs. Collector−Emitter Voltage

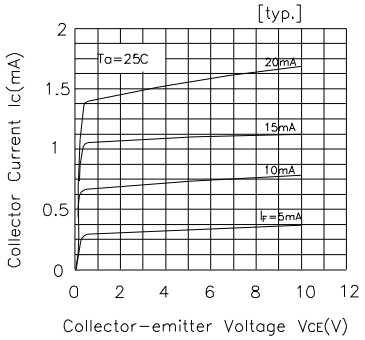


Fig.7 Relative Collector Current vs. Shield Distance(1)

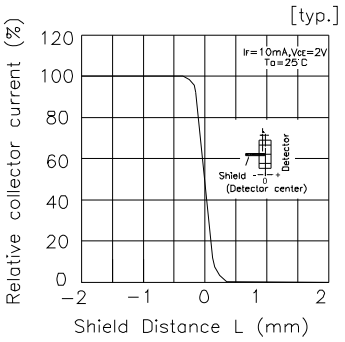


Fig.8 Relative Collector Current vs. Shield Distance(2)

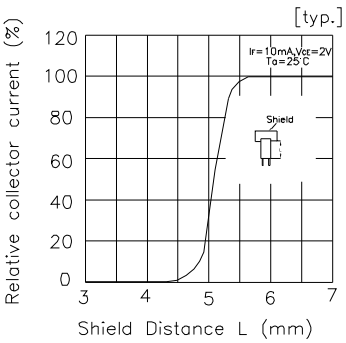
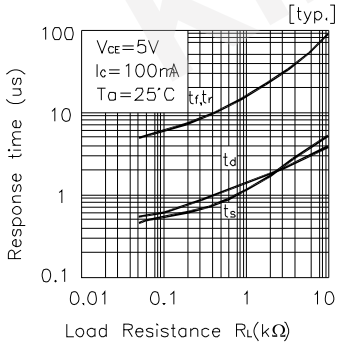
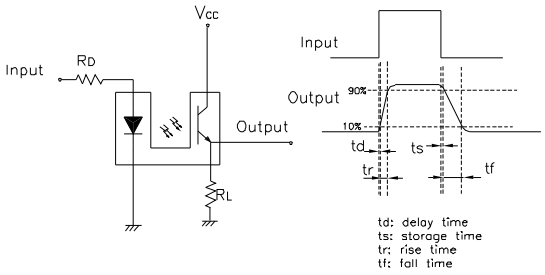


Fig.9 Response Time vs Load Resistance

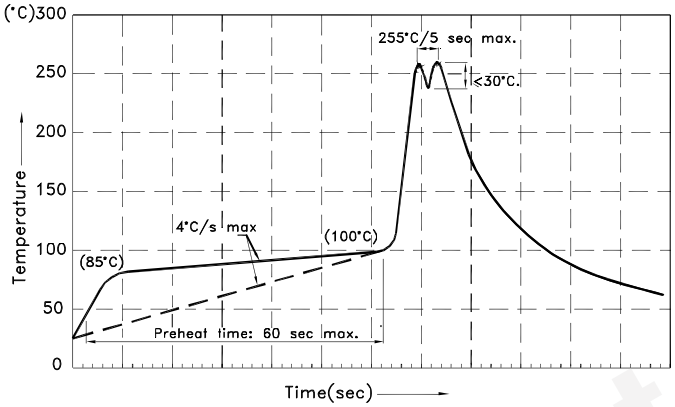


Test Circuit for Response Time



KRA021

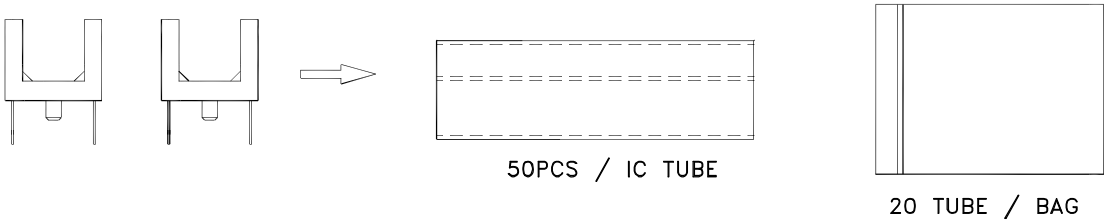
Wave Soldering Profile For Lead-free Through-hole LED.

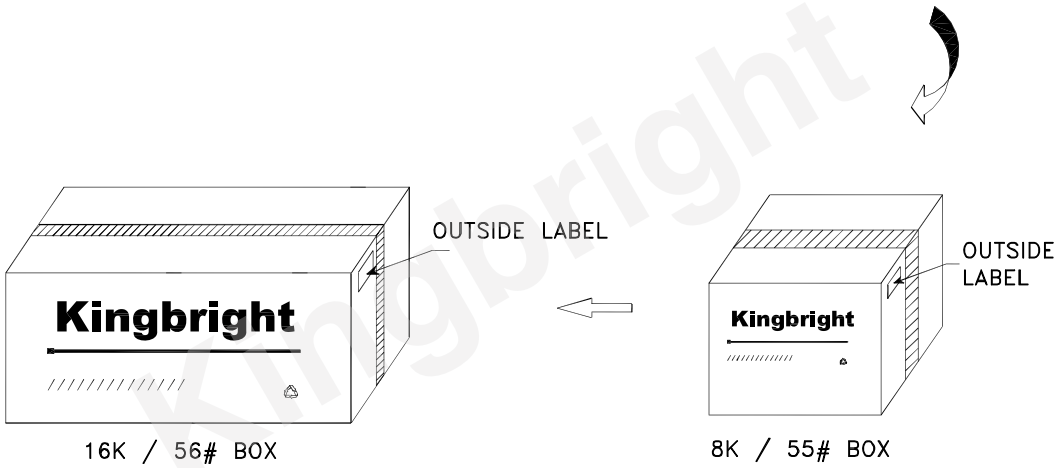


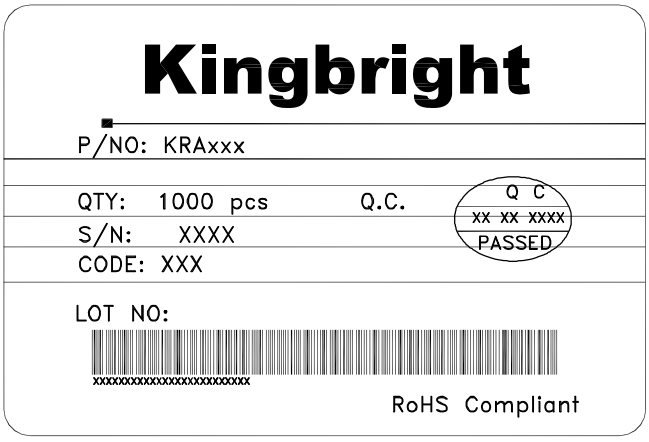
Notes:

1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.

PACKING & LABEL SPECIFICATIONS **KRA021**







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