

Part Number: KTIR0611S

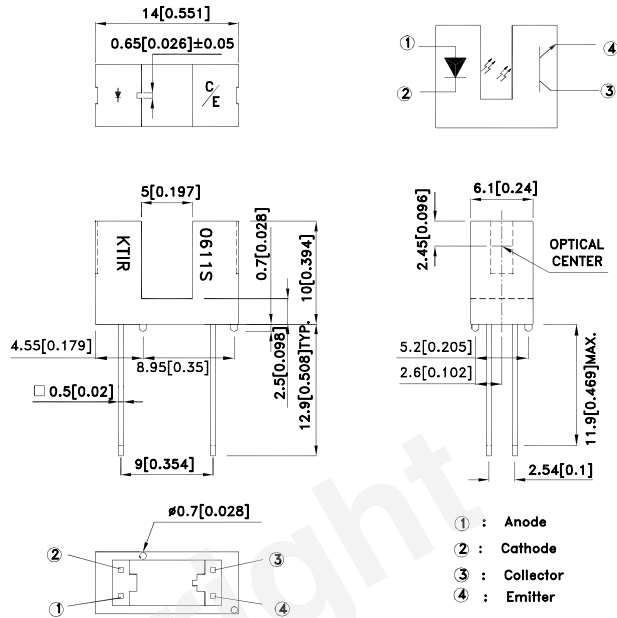
### Package Dimensions

#### Features

- Ultra-small.
- Minimal influence from stray light.
- Low collector-emitter saturation voltage.
- RoHS Compliant.

#### Applications

- Optical control equipment.
- Cameras.
- Floppy disk drives.



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25(0.01")$  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 data sheet 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	$P_d$	75	mW
	Peak Forward Current (Pulse Width $\leq 100\mu s$ , Duty Cycle =1%)	$I_{FP}$	1	A
Output	Collector-emitter voltage	$V_{CEO}$	35	V
	Emitter-collector voltage	$V_{ECO}$	6	V
	Collector current	$I_C$	20	mA
	Collector power dissipation	$P_C$	75	mW
Operating temperature		$T_{opr}$	-25~+85	°C
Storage temperature		$T_{stg}$	-40~+100	°C
soldering temperature (1/16 inch from body for 5 seconds)		$T_{sol}$	260	°C

#### Note:

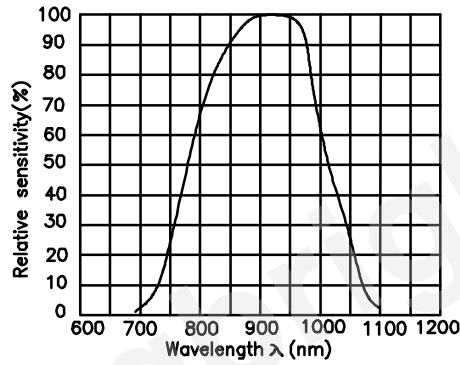
1. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



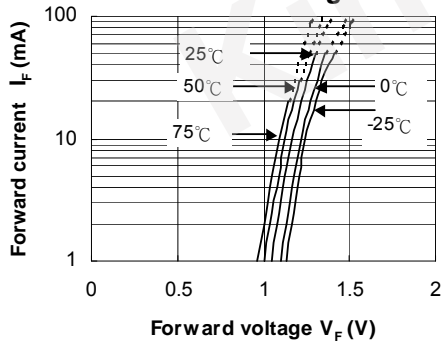
**\*Electro-optical Characteristics(Ta=25°C)**

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	$\mu A$	
	Peak Wavelength	$\lambda_P$	$I_F=20mA$	-	940	-	nm	
Output	Collector dark current	$I_{CEO}$	$V_{CE}=20V$	-	-	100	nA	
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(SAT)}$	$I_C=1mA$ $I_F=40mA$	-	-	0.4	V	
	Current transfer ratio	CTR	$V_{CE}=5V$ $I_F=20mA$	2	14	-	%	
	Response time	Rise time	$t_r$	$V_{CE}=2V$ $I_C=2mA$	-	5	25	$\mu sec$
		Fall time	$t_f$	$R_L=100\Omega$	-	4	20	$\mu sec$

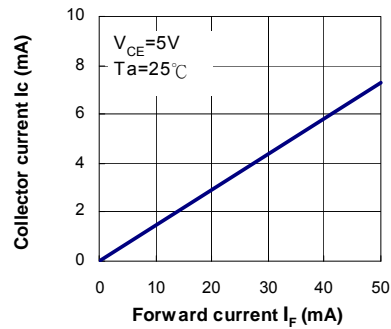
\*1 Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.



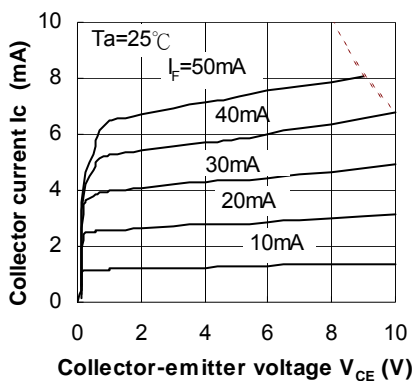
**Fig. 1 Forward Current vs. Forward Voltage**



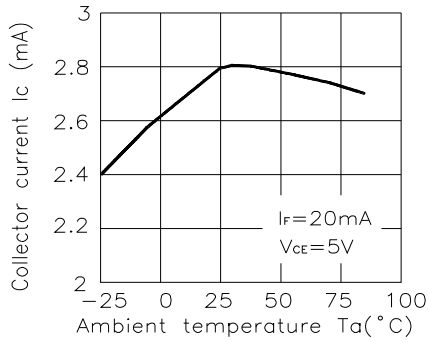
**Fig. 2 Collector Current vs. Forward Current**



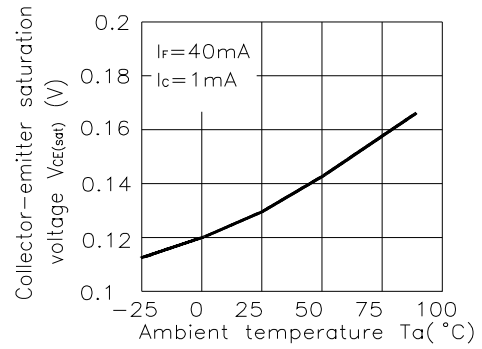
**Fig. 3 Collector Current vs. Collector-emitter Voltage**



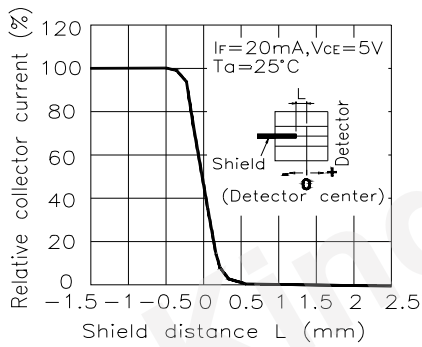
**Fig. 4 Collector Current vs. Ambient Temperature**



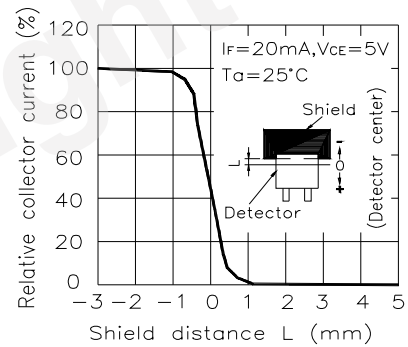
**Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature**



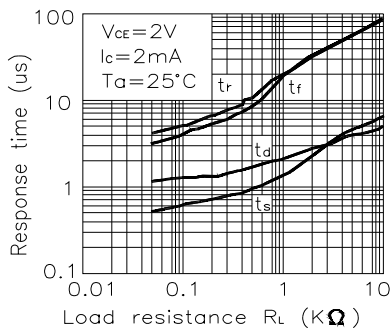
**Fig.6 Relative Collector Current vs. Shield Distance (1)**



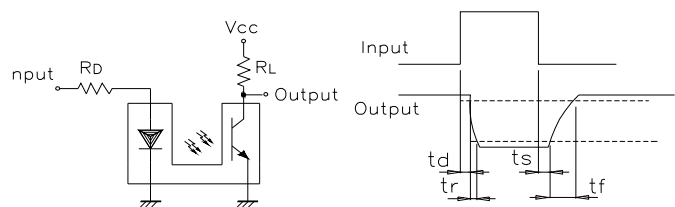
**Fig.7 Relative Collector Current vs. Shield Distance (2)**



**Fig.8 Response Time vs Load Resistance**

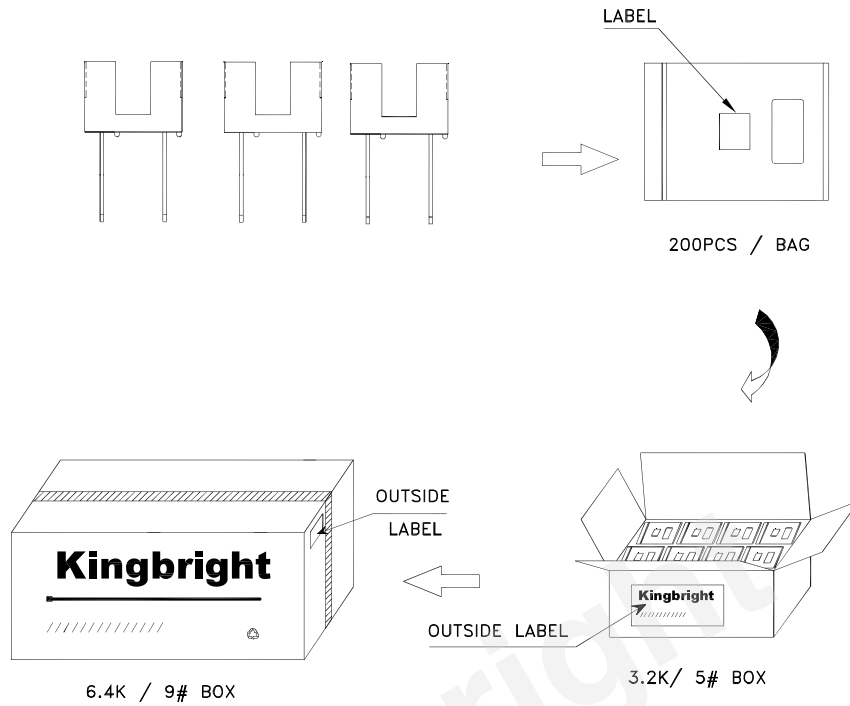


**Test Circuit for Response Time**



### PACKING & LABEL SPECIFICATIONS

### KTIR0611S



<h2>Kingbright</h2>				
P/NO: KTIRxxx				
QTY: 200 pcs	Q.C.			
S/N: XXXX	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">Q C</td> </tr> <tr> <td style="text-align: center;">XX XX XXXX</td> </tr> <tr> <td style="text-align: center;">PASSED</td> </tr> </table>	Q C	XX XX XXXX	PASSED
Q C				
XX XX XXXX				
PASSED				
CODE: XXX				
LOT NO:				
XXXXXXXXXXXXXXXXXXXXXXXXXXXX				
RoHS Compliant				

### Terms and conditions for the usage of this document

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
5. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright.
6. All design applications should refer to Kingbright application notes available at [http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)