

Part Number: KTIR0311S

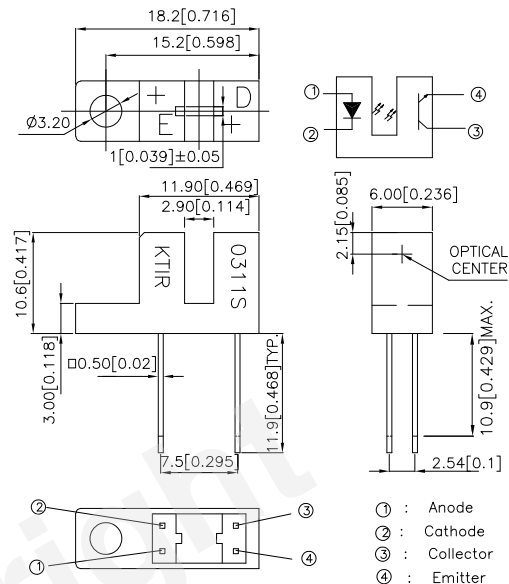
Features

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

Applications

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

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 (0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

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

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 $\leq 100\mu\text{s}$, 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	$^\circ\text{C}$
Storage Temperature		T_{stg}	-40~+100	$^\circ\text{C}$
Soldering Temperature (1/16 inch from body for 5 seconds)		T_{sol}	260	$^\circ\text{C}$



Electro-optical Characteristics (T_a=25°C)

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage	V _F	I _F =20mA	—	1.2	1.5	V
	Reverse current	I _R	V _R =5V	—	—	10	μA
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	—	38	—	%
	Response time	Rise time	V _{CE} =2V I _C =2mA R _L =100Ω	—	5	25	μsec
		Fall time		—	4	20	μsec

Fig.1 Forward Current vs. Forward Voltage

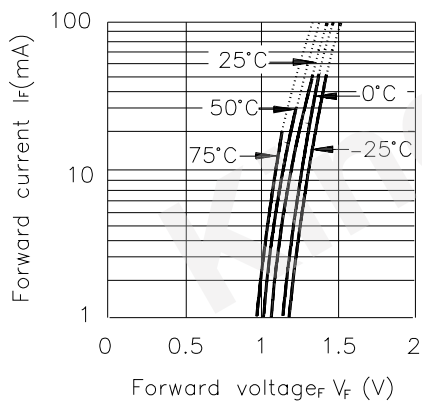


Fig.2 Collector Current vs. Forward Current

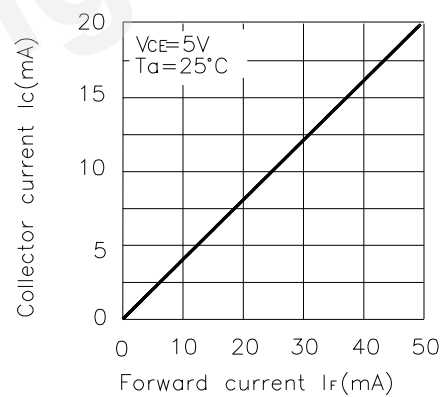


Fig.3 Collector Current vs. Collector-emitter Voltage

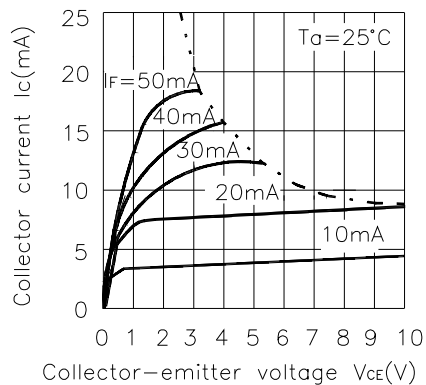


Fig.4 Collector Current vs. Ambient Temperature

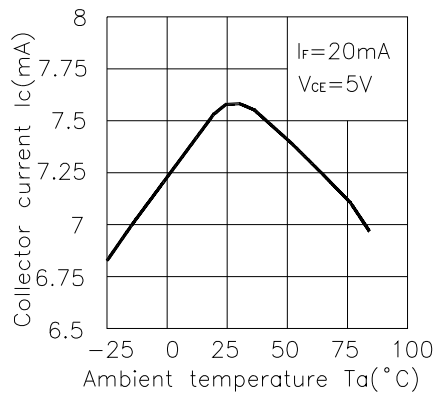


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

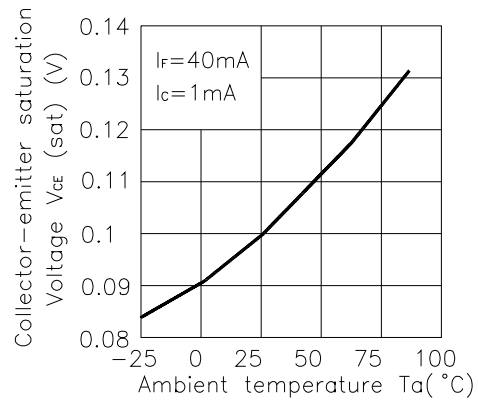


Fig.6 Relative Collector Current vs. Shield Distance(1)

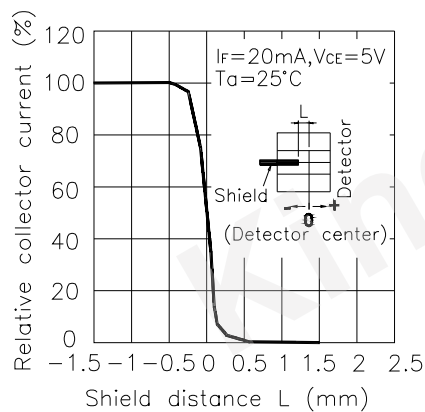


Fig.7 Relative Collector Current vs. Shield Distance(2)

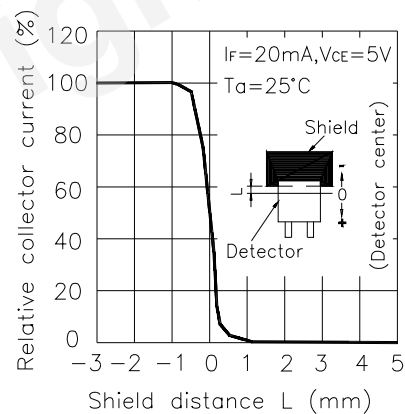
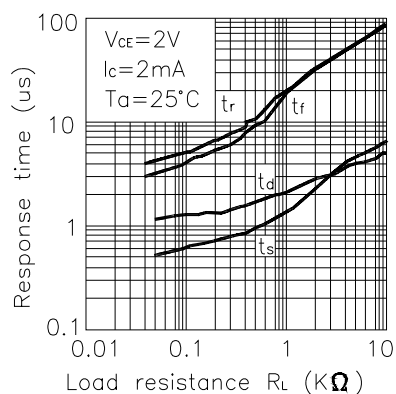
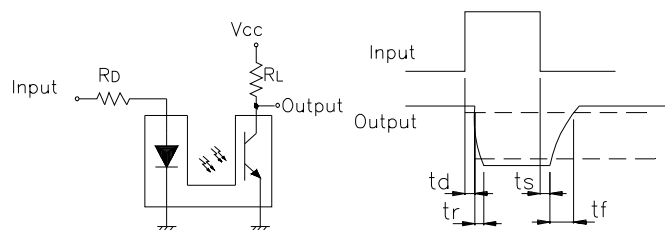


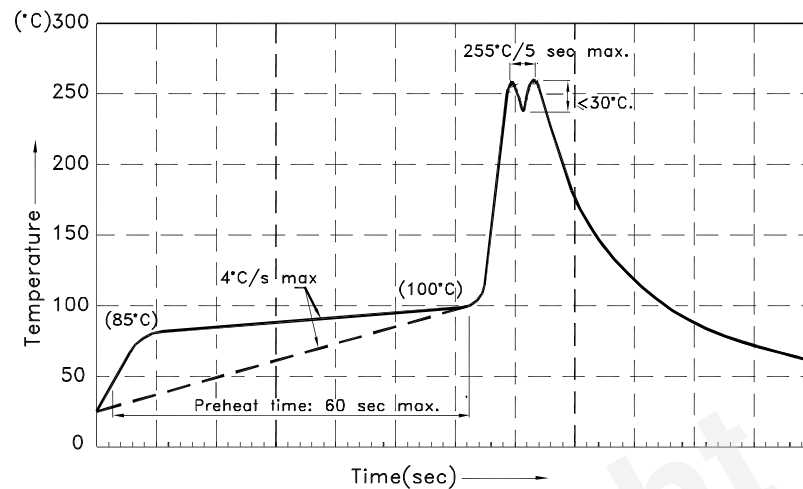
Fig.8 Response Time vs. Load Resistance



Test Circuit for Response Time



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

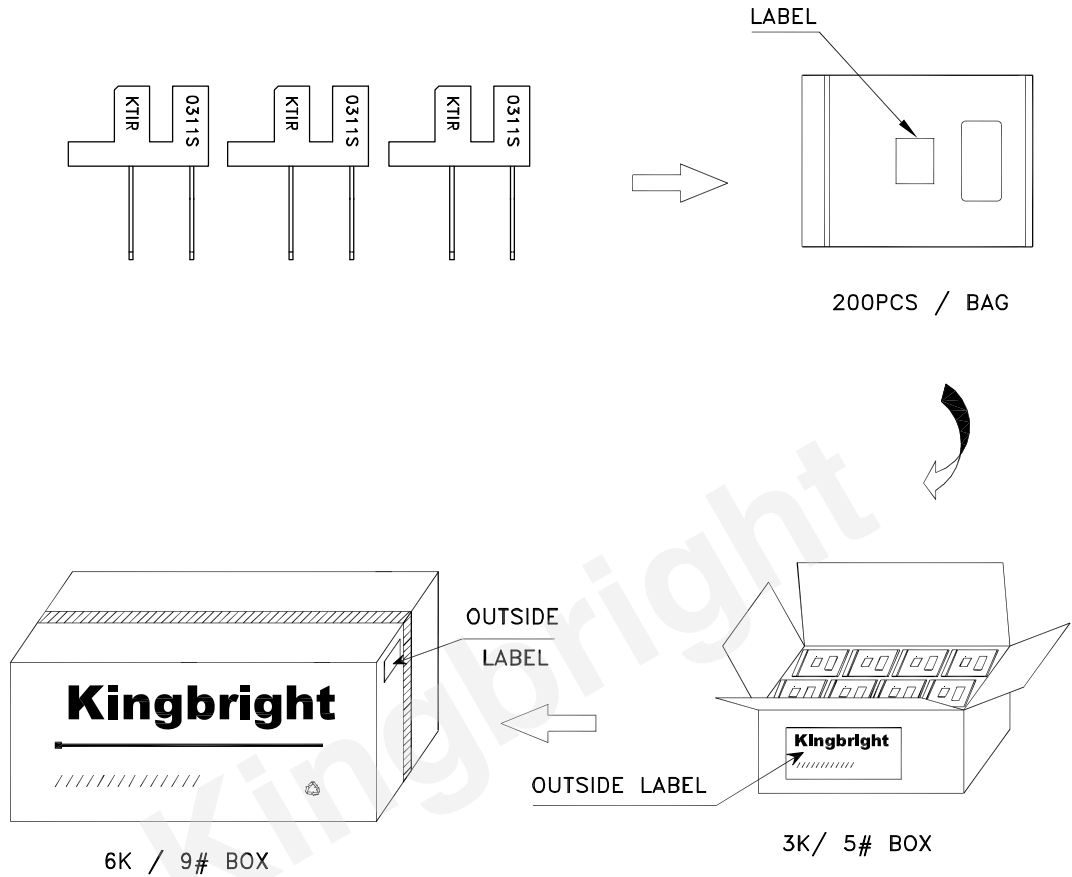



Notes:

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

KTIR0311S



Kingbright		
P/NO: KTIR0311S		
QTY: 200 pcs	Q.C.	Q C
S/N: XXXX		XX XX XXXX
CODE: XXX		PASSED
LOT NO:		
		
RoHS Compliant		

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