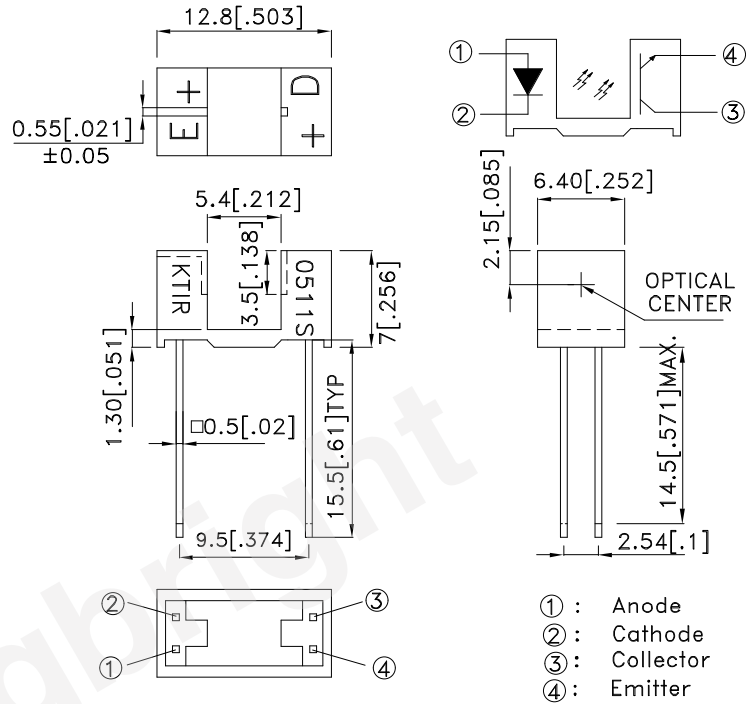


Part Number: KTIR0511S

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.

Features

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

Applications

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

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



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	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	$V_{CE}=5V$ $I_F=20mA$	-	10	-	%	
	Response time	Rise time	t_r	$V_{CE}=2V$ $I_C=2mA$	-	5	25	μs
		Fall time	t_f	$R_L=100\Omega$	-	4	20	μs

Fig.1 Forward Current vs. Forward Voltage

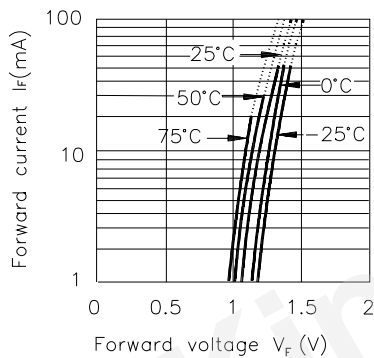


Fig.2 Collector Current vs. Forward Current

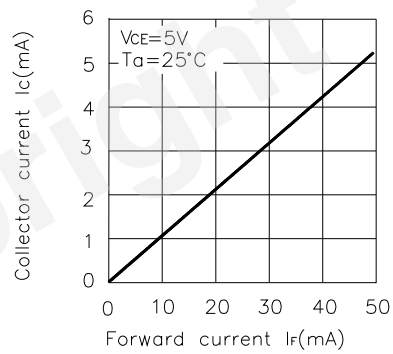
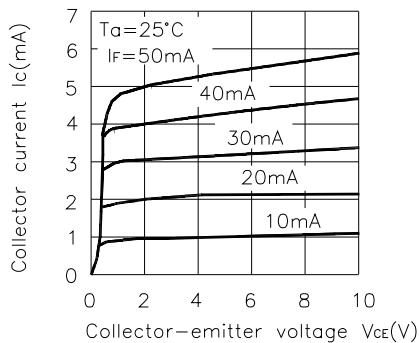
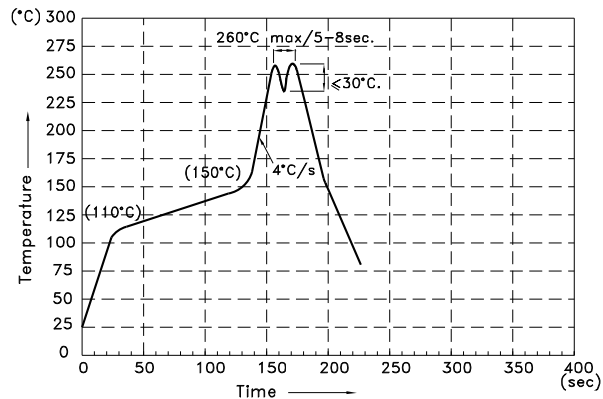


Fig.3 Collector Current vs. Collector-emitter Voltage



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.

Fig. 4 Collector Current vs. Ambient Temperature

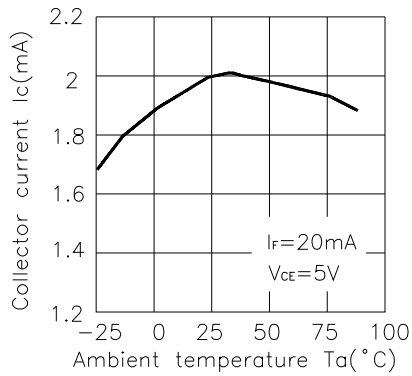


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

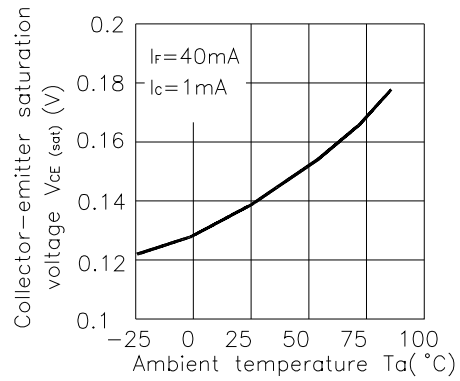


Fig.6 Relative Collector Current vs. Shield Distance (1)

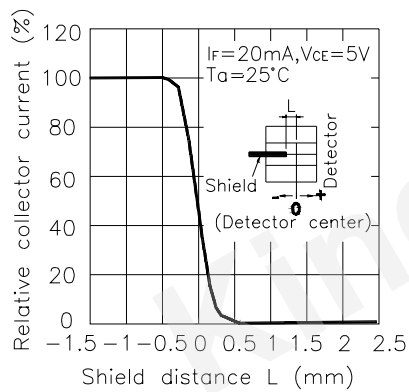


Fig.7 Relative Collector Current vs. Shield Distance (2)

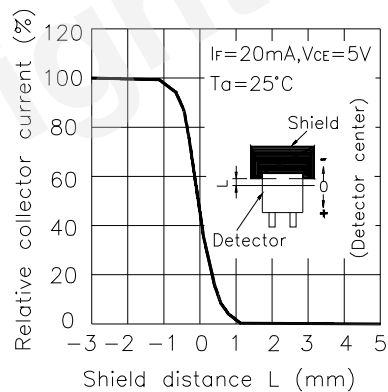
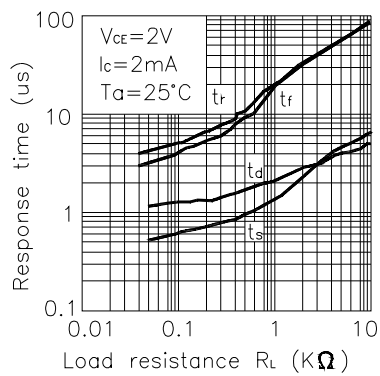


Fig.8 Response Time vs Load Resistance



Test Circuit for Response Time

