

Part Number: KTIR0611S

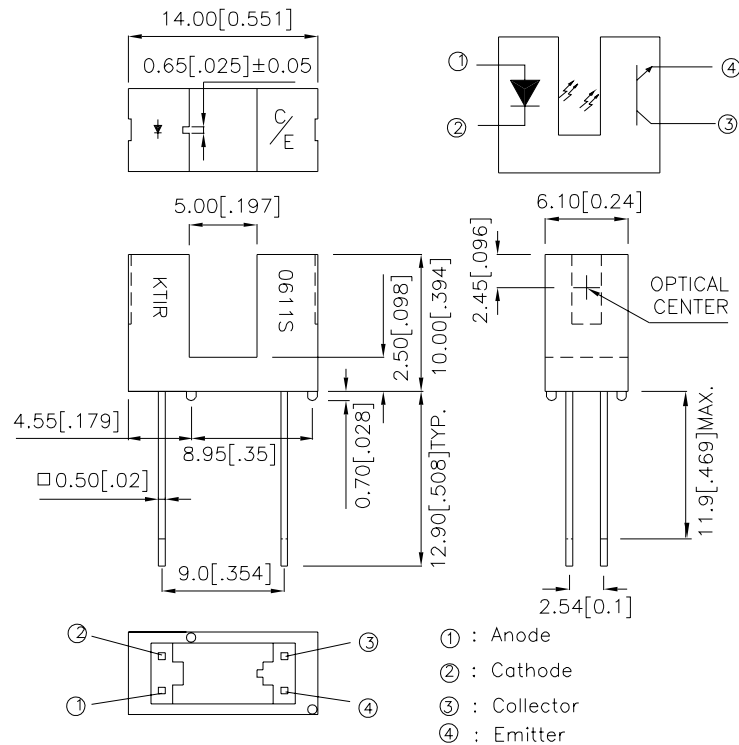
Package Dimensions

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 ± 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(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 | $I_F=20\text{mA}$ | 1.0 | 1.2 | 1.5 | V | |
| | Reverse Current | I_R | $V_R=6\text{V}$ | - | - | 10 | μA | |
| | Peak Wavelength | λ_P | $I_F=20\text{mA}$ | - | 940 | - | nm | |
| Output | Collector dark current | I_{CEO} | $V_{CE}=20\text{V}$ | - | - | 100 | nA | |
| Transfer characteristics | Collector-emitter saturation voltage | $V_{CE(SAT)}$ | $I_C=1\text{mA}$ $I_F=40\text{mA}$ | - | - | 0.4 | V | |
| | Current transfer ratio | CTR | $V_{CE}=5\text{V}$ $I_F=20\text{mA}$ | - | 14 | - | % | |
| | Response time | Rise time | t_r | $V_{CE}=2\text{V}$ $I_C=2\text{mA}$ | - | 5 | 25 | μsec |
| | | Fall time | t_f | $R_L=100\Omega$ | - | 4 | 20 | μsec |

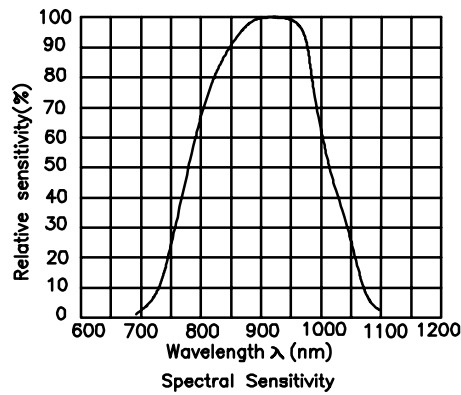


Fig. 1 Forward Current vs. Forward Voltage

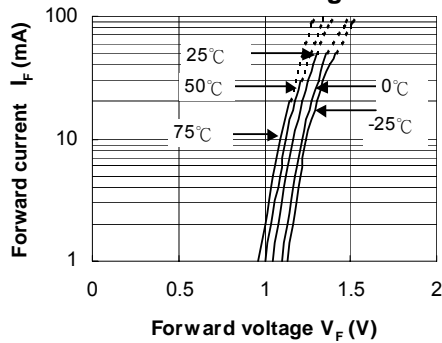


Fig. 2 Collector Current vs. Forward Current

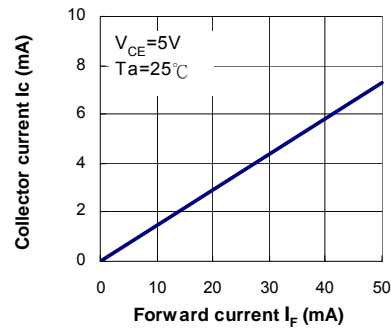


Fig. 3 Collector Current vs. Collector-emitter Voltage

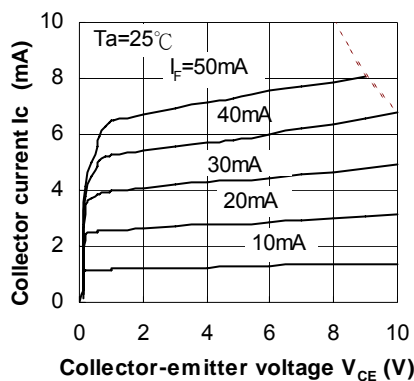


Fig. 4 Collector Current vs. Ambient Temperature

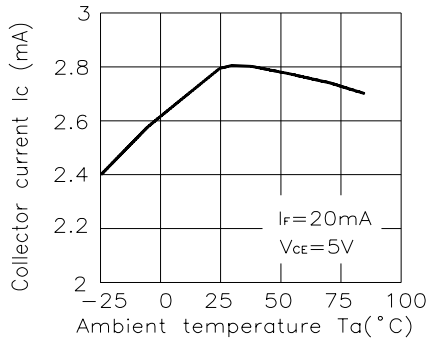


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

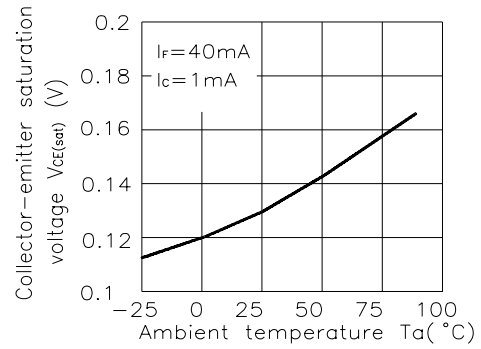


Fig.6 Relative Collector Current vs. Shield Distance (1)

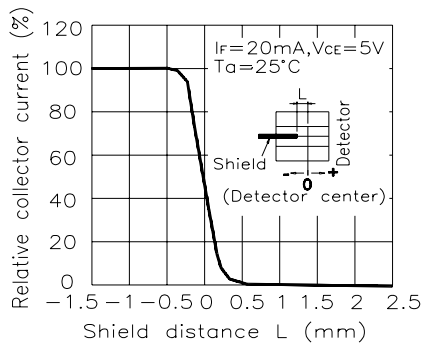


Fig.7 Relative Collector Current vs. Shield Distance (2)

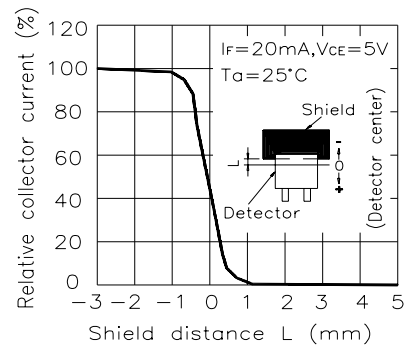
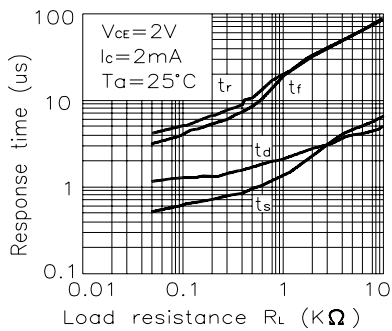


Fig.8 Response Time vs Load Resistance



Test Circuit for Response Time

