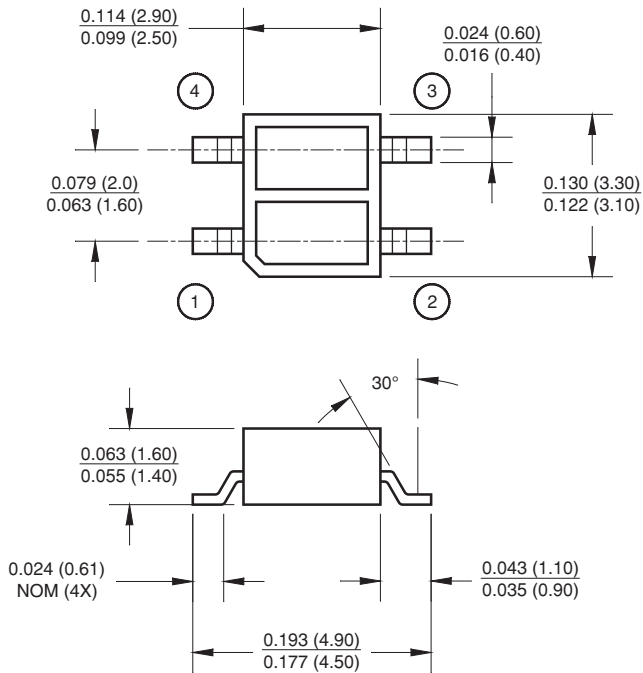


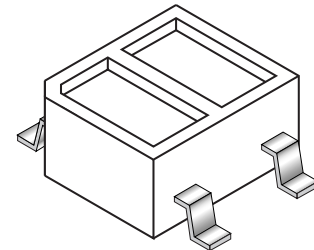
PACKAGE DIMENSIONS



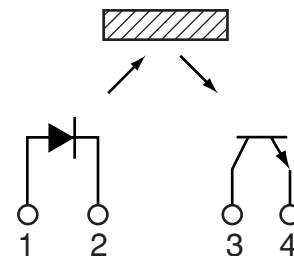
PIN 1 ANODE PIN 3 COLLECTOR
PIN 2 CATHODE PIN 4 EMITTER

NOTES:

1. Dimensions for all drawings are in inches (millimeters).
2. Tolerance of $\pm .010$ (.25) on all non-nominal dimensions



SCHEMATIC



FEATURES

- Phototransistor output
- Tape and reel packaging
- No contact surface sensing
- Miniature package
- Lead form style: Gull Wing

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Rating | Units |
|---|-------------|----------------|------------------|
| Operating Temperature | T_{OPR} | -25 to +85 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -30 to +100 | $^\circ\text{C}$ |
| Soldering Temperature (Iron) ^(2,3,4) | T_{SOL-I} | 240 for 5 sec | $^\circ\text{C}$ |
| Soldering Temperature (Flow) ^(2,3) | T_{SOL-F} | 260 for 10 sec | $^\circ\text{C}$ |
| EMITTER | | | |
| Continuous Forward Current | I_F | 50 | mA |
| Reverse Voltage | V_R | 5 | V |
| Peak Forward Current ⁽⁵⁾ | I_{FP} | 1 | mA |
| Power Dissipation ⁽¹⁾ | P_D | 75 | mW |
| SENSOR | | | |
| Collector-Emitter Voltage | V_{CEO} | 30 | V |
| Emitter-Collector Voltage | V_{ECO} | 5 | V |
| Collector Current | I_C | 20 | mA |
| Power Dissipation ⁽¹⁾ | P_D | 50 | mW |

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| PARAMETER | TEST CONDITIONS | SYMBOL | MIN. | TYP. | MAX. | UNITS |
|--------------------------------|--|----------------|------|------|------|---------------|
| INPUT DIODE | | | | | | |
| Forward Voltage | $I_F = 20\text{ mA}$ | V_F | — | 1.2 | 1.6 | V |
| Reverse Leakage Current | $V_R = 5\text{ V}$ | I_R | — | — | 10 | μA |
| Peak Emission Wavelength | $I_F = 20\text{ mA}$ | λ_{PE} | — | 940 | — | nm |
| OUTPUT TRANSISTOR | | | | | | |
| Collector-Emitter Dark Current | $V_{CE} = 20\text{ V}, I_F = 0\text{ mA}$ | I_D | — | — | 100 | nA |
| COUPLED | | | | | | |
| On-State Collector Current | $I_F = 20\text{ mA}, V_{CE} = 5\text{ V}$ | $I_{C(ON)}$ | 0.15 | 0.40 | — | mA |
| Saturation Voltage | | $V_{CE(SAT)}$ | — | — | 0.3 | V |
| Rise Time | $V_{CC} = 5\text{ V}, I_{C(ON)} = 100\ \mu\text{A}, R_L = 1\text{K}\Omega$ | t_r | — | 20 | — | μs |
| Fall Time | | t_f | — | 20 | — | |

NOTES:

1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$ above 25 $^\circ\text{C}$.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) from housing.
5. Pulse conditions: $t_p = 100\ \mu\text{s}; T = 10\text{ ms}$.

TYPICAL PERFORMANCE CURVES

Fig. 1 Normalized Collector Current vs. Distance between device and reflector

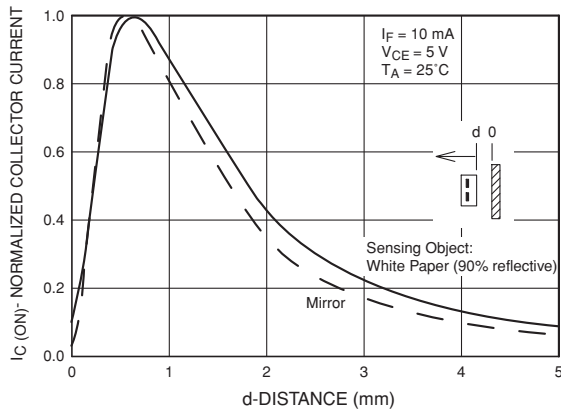


Fig. 2 Collector Current vs. Forward Current

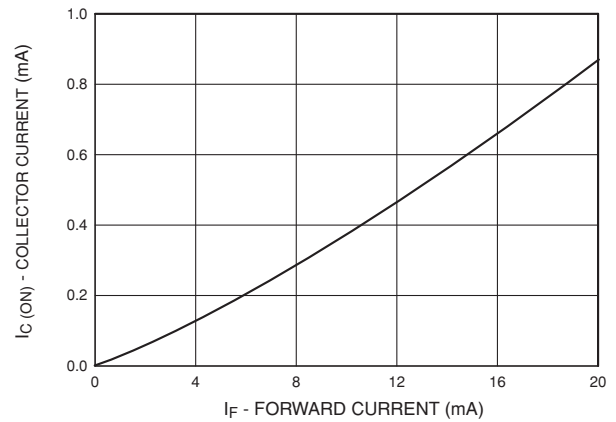


Fig. 3 Collector Current vs. Collector to Emitter Voltage

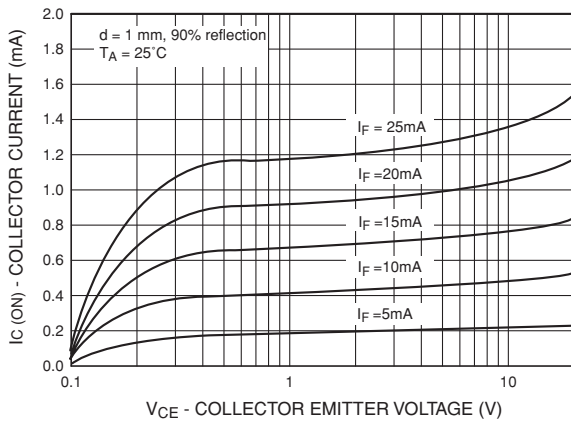


Fig. 4 Collector Emitter Dark Current (Normalized) vs. Ambient Temperature

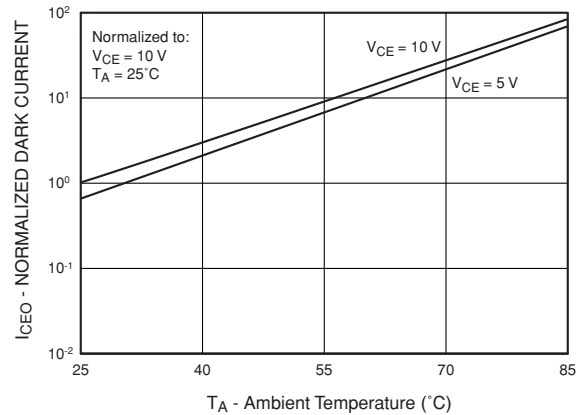


Fig. 5 Forward Current vs. Forward Voltage

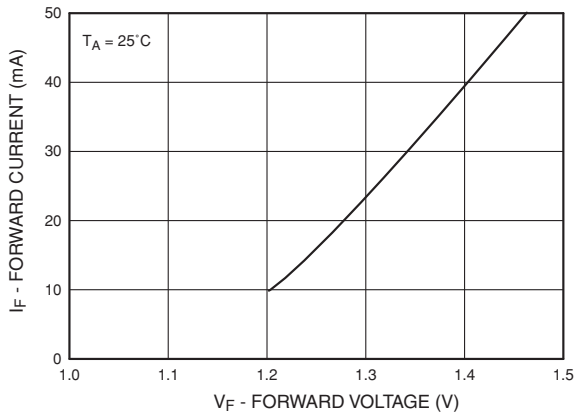


Fig. 6 Rise and Fall Time vs. Load Resistance

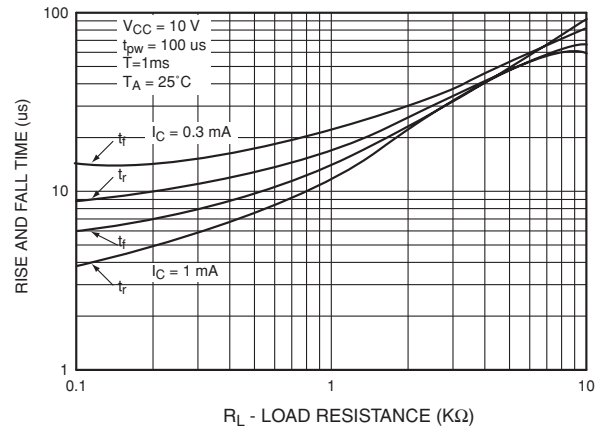
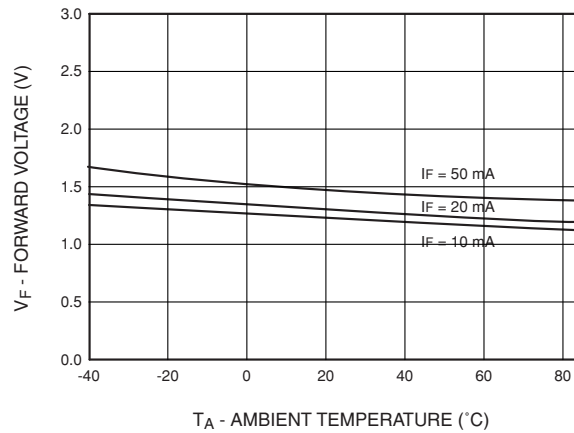


Fig. 7 Forward Voltage vs. Ambient Temperature



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