

HOA2005

Transmissive Optoschmitt Sensor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---------------------------------------|-----------------------|-----|-----|-----|---------------|---|
| IR EMITTER | | | | | | |
| Forward Voltage | V_F | | | 1.6 | V | $I_F=20\text{ mA}$ |
| Reverse Leakage Current | I_R | | | 10 | μA | $V_R=3\text{ V}$ |
| DETECTOR | | | | | | |
| Operating Supply Voltage | V_{CC} | 4.5 | | 12 | V | |
| Low Level Supply Current | I_{CCL} | 4.0 | | 12 | mA | $V_{CC}=5\text{ V}$ $V_{CC}=12\text{ V}$ |
| High Level Supply Current | I_{CCH} | 2.0 | | 10 | mA | $V_{CC}=5\text{ V}$ $V_{CC}=12\text{ V}$ |
| Low Level Output Voltage | V_{OL} | | | 0.4 | V | $I_{OL}=12.8\text{ mA}$, $I_F=0\text{ mA}$ |
| High Level Output Voltage | V_{OH} | 2.4 | | | V | $I_{OH}=0$, $I_F=20\text{ mA}$ |
| Hysteresis ⁽²⁾ | HYST | | 10 | | % | |
| Propagation Delay, Low-High, High-Low | t_{PLH} , t_{PHL} | | 5 | | μs | $V_{CC}=5\text{ V}$, $I_F=20\text{ mA}$ |
| Rise Time | t_r | | 60 | | ns | $R_L=390\ \Omega$, $C_L=50\text{ pF}$ |
| Fall Time | t_f | | 6 | | ns | $R_L=390\ \Omega$, $C_L=50\text{ pF}$ |
| COUPLED CHARACTERISTICS | | | | | | |
| IRET Trigger Current | I_{FT} | | | 20 | mA | $V_{CC}=5\text{ V}$ |
| HOA2005-001 | | | | 20 | | |

Notes

1. It is recommended that a bypass capacitor, 0.1 μF typical, be added between V_{CC} and GND near the device in order to stabilize power supply line.
2. Hysteresis is defined as the difference between the operating and release threshold intensities, expressed as a percentage of the operate threshold intensity.

ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted)

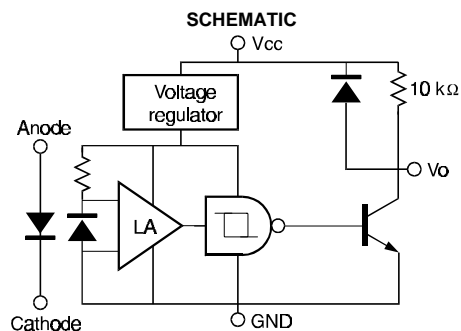
| | |
|-------------------------------|---------------|
| Operating Temperature Range | -40°C to 70°C |
| Storage Temperature Range | -40°C to 85°C |
| Soldering Temperature (5 sec) | 240°C |

IR EMITTER

| | |
|----------------------------|-----------------------|
| Power Dissipation | 100 mW ⁽¹⁾ |
| Reverse Voltage | 3 V |
| Continuous Forward Current | 50 mA |

DETECTOR

| | |
|-----------------------------|---------------------|
| Supply Voltage | 12 V ⁽²⁾ |
| Output Sink Current | 18 mA |
| Duration of Output | |
| Short to V_{CC} or Ground | 1.0 sec |



Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

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SWITCHING WAVEFORM

cir_013.cdr

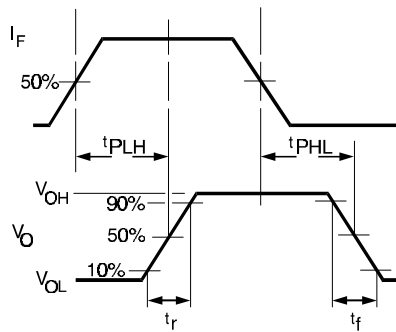


Fig. 2 IRED Forward Bias Characteristics

gra_073.ds4

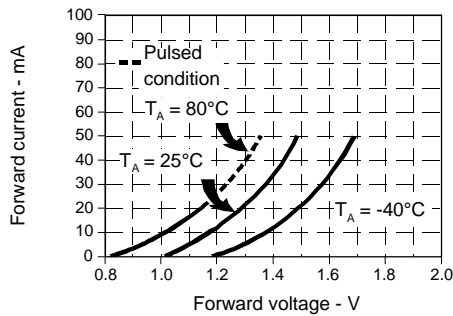


Fig. 1 SWITCHING WAVEFORM

gra_013.ds4

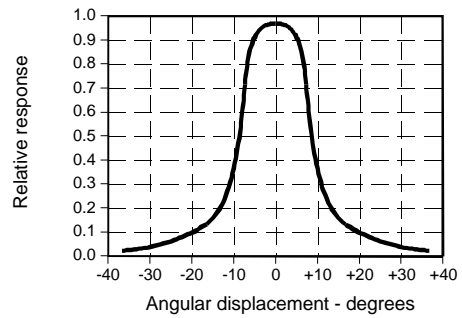
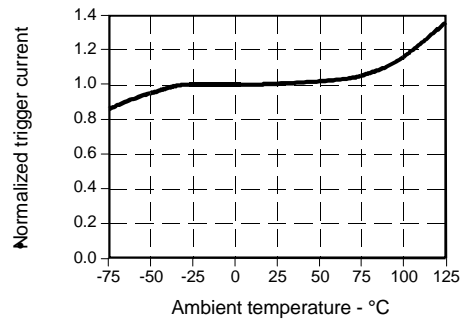


Fig. 3 IRED Trigger Current vs Temperature

gra_098.ds4



All Performance Curves Show Typical Values

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