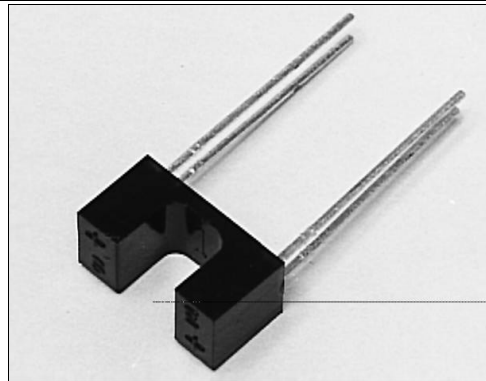


# HOA1882

## Transmissive Sensor

### FEATURES

- Choice of phototransistor or photodarlington output
- Compact package size
- Dust protective housing
- 0.060 in.(1.52 mm)dia. detector aperture
- 0.200 in.(5.08 mm) slot width



INFRA-25.TIF

### DESCRIPTION

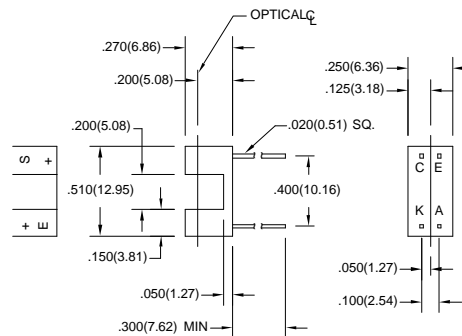
The HOA1882 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1882- 011, - 012) or photodarlington (HOA1882- 013) encased in a black IR transmissive thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The HOA1882 series employs an IR transmissive housing which features smooth optical faces without external aperture openings; this feature is desirable when aperture blockage from airborne contaminants is a possibility.

The HOA1882 series employs plastic molded components. For additional component information see SEP8506/8706, SDP8406, and SDP8106.

Housing material is IR transmissive polysulfone. Housings are soluble in chlorinated hydrocarbons and ketones. Recommended cleaning agents are methanol and isopropanol.

### OUTLINE DIMENSIONS in inches (mm)

Tolerance 3 plc decimals ±0.010(0.25)  
2 plc decimals ±0.020(0.51)



DIM\_053.cdr

# HOA1882

## Transmissive Sensor

### ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| PARAMETER   | SYMBOL        | MIN               | TYP | MAX               | UNITS         | TEST CONDITIONS   |
|---|---------------|-------------------|-----|-------------------|---------------|---|
| <b>IR EMITTER</b>   |               |                   |     |                   |               |   |
| Forward Voltage   | $V_F$         |                   |     | 1.6               | V             | $I_F=20\text{ mA}$  |
| Reverse Leakage Current   | $I_R$         |                   |     | 10                | $\mu\text{A}$ | $V_R=3\text{ V}$  |
| <b>DETECTOR</b>   |               |                   |     |                   |               |   |
| Collector-Emitter Breakdown Voltage<br>HOA1882-011, -012<br>HOA1882-013           | $V_{(BR)CEO}$ | 30<br>15          |     |                   | V             | $I_C=100\ \mu\text{A}$  |
| Emitter-Collector Breakdown Voltage   | $V_{(BR)ECO}$ | 5.0               |     |                   | V             | $I_E=100\ \mu\text{A}$  |
| Collector Dark Current<br>HOA1882-011, -012<br>HOA1882-013                        | $I_{CEO}$     |                   |     | 100<br>250        | nA            | $V_{CE}=10\text{ V}$<br>$I_F=0$   |
| <b>COUPLED CHARACTERISTICS</b>  |               |                   |     |                   |               |   |
| On-State Collector Current<br>HOA1882-011<br>HOA1882-012<br>HOA1882-013           | $I_{C(ON)}$   | 0.3<br>1.8<br>4.0 |     |                   | mA            | $V_{CE}=5\text{ V}$<br>$I_F=20\text{ mA}$   |
| Collector-Emitter Saturation Voltage<br>HOA1882-011<br>HOA1882-012<br>HOA1882-013 | $V_{CE(SAT)}$ |                   |     | 0.4<br>0.4<br>1.1 | V             | $I_F=20\text{ mA}$<br>$I_C=40\ \mu\text{A}$<br>$I_C=230\ \mu\text{A}$<br>$I_C=500\ \mu\text{A}$ |
| Rise And Fall Time<br>HOA1882-011, -012<br>HOA1882-013                            | $t_r, t_f$    |                   |     | 15<br>75          | $\mu\text{s}$ | $V_{CC}=5\text{ V}, I_C=1\text{ mA}$<br>$R_L=1000\ \Omega$<br>$R_L=100\ \Omega$                 |

### ABSOLUTE MAXIMUM RATINGS

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

Operating Temperature Range -40°C to 85°C

Storage Temperature Range -40°C to 85°C

Soldering Temperature (5 sec) 240°C

#### IR EMITTER

Power Dissipation 100 mW <sup>(1)</sup>

Reverse Voltage 3 V

Continuous Forward Current 50 mA

#### DETECTOR

Collector-Emitter Voltage 30 V TRANS. 15 V DARLINGTON

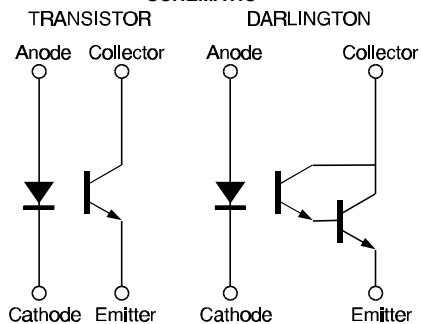
Emitter-Collector Voltage 5 V 5 V

Power Dissipation 100 mW <sup>(1)</sup> 100 mW <sup>(1)</sup>

#### Notes

1. Derate linearly at 0.78 mW/°C above 25°C.

### SCHEMATIC



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

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# HOA1882

## Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

gra\_092.ds4



Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra\_096.ds4



Fig. 3 Dark Current vs Temperature

gra\_301.cdr



Fig. 4 Collector Current vs Ambient Temperature

gra\_095.ds4



All Performance Curves Show Typical Values

**HOA1882**  
Transmissive Sensor

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