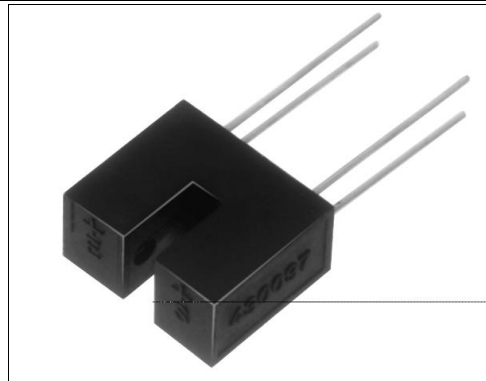


HOA2862

Transmissive Sensor

FEATURES

- Choice of phototransistor or photodarlington output
- Wide operating temperature range (- 55°C to +100°C)
- Accurate position sensing
- 0.100 in.(2.54 mm) slot width



INFRA-77.TIF

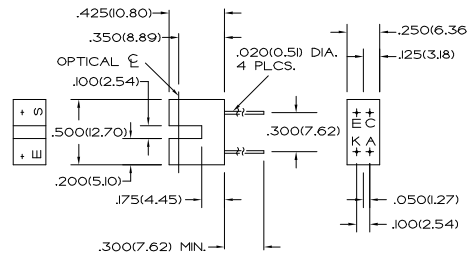
DESCRIPTION

The HOA2862 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA2862- 001, - 002) or photodarlington (HOA2862- 003) encased in a black thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The HOA2862 series employs metal can packaged components and has a 0.025 in.(.635 mm) x 0.040 in.(1.02 mm) vertical aperture in front of the detector. The narrow detector aperture is ideal for use in applications in which the maximum rejection of ambient light is important. For additional component information see SE1450, SD1440, and SD1410.

Housing material is polyester. 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_058.cdr

HOA2862

Transmissive 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 | | | | | | |
| Collector-Emitter Breakdown Voltage HOA2862-001, -002 HOA2862-003 | $V_{(BR)CEO}$ | 30 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 HOA2862-001, -002 HOA2862-003 | I_{CEO} | | | 100 250 | nA | $V_{CE}=10\text{ V}$ $I_F=0$ |
| COUPLED CHARACTERISTICS | | | | | | |
| On-State Collector Current HOA2862-001 HOA2862-002 HOA2862-003 | $I_{C(ON)}$ | 0.2 1.8 4.0 | | | mA | $V_{CE}=5\text{ V}$ $I_F=20\text{ mA}$ |
| Collector-Emitter Saturation Voltage HOA2862-001 HOA2862-002 HOA2862-003 | $V_{CE(SAT)}$ | | | 0.4 0.4 1.1 | V | $I_F=20\text{ mA}$ $I_C=25\ \mu\text{A}$ $I_C=75\ \mu\text{A}$ $I_C=500\ \mu\text{A}$ |
| Rise And Fall Time HOA2862-001, -002 HOA2862-003 | t_r, t_f | | | 15 75 | μs | $V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\ \Omega$ $R_L=100\ \Omega$ |

ABSOLUTE MAXIMUM RATINGS

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

Operating Temperature Range -55°C to 100°C

Storage Temperature Range -55°C to 125°C

Soldering Temperature (10 sec) 260°C

IR EMITTER

Power Dissipation 75 mW ⁽¹⁾

Reverse Voltage 3 V

Continuous Forward Current 50 mA

DETECTOR

Collector-Emitter Voltage 30 V

Emitter-Collector Voltage 5 V

Power Dissipation 75 mW ⁽¹⁾

Collector DC Current 30 mA

TRANS. DARLINGTON

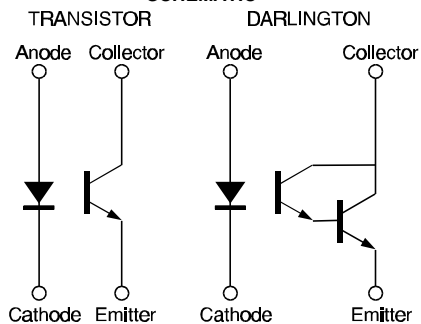
15 V

5 V

75 mW ⁽¹⁾

30 mA

SCHEMATIC



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

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HOA2862

Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

gra_092.ds4

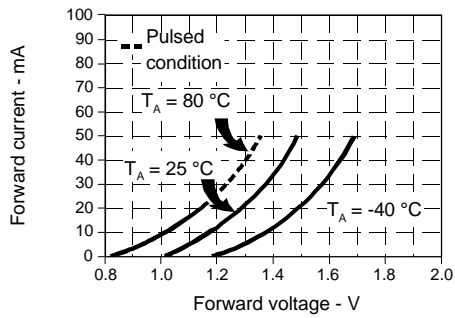


Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra_096.ds4

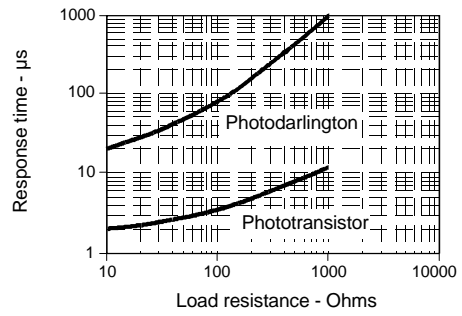


Fig. 3 Dark Current vs Temperature

gra_303.cdr

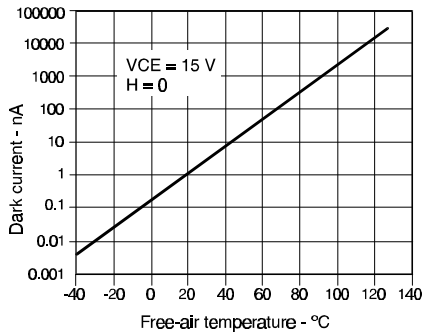


Fig. 4 Collector Current vs Ambient Temperature

gra_095.ds4



All Performance Curves Show Typical Values

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