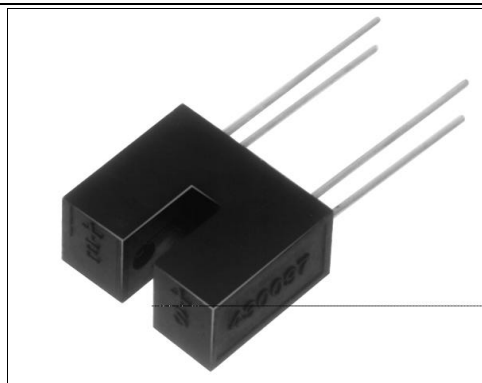


# HOA2862

## 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

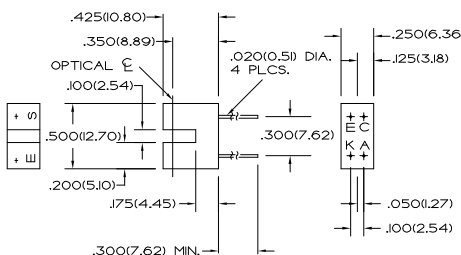
### DESCRIPTION

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
<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 HOA2862-001, -002 HOA2862-003	$V_{(BR)CEO}$	30 15			V	$I_C=100\text{ }\mu\text{A}$
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	$I_E=100\text{ }\mu\text{A}$
Collector Dark Current HOA2862-001, -002 HOA2862-003	$I_{CEO}$			100 250	nA	$V_{CE}=10\text{ V}$ $I_F=0$
<b>COUPLED CHARACTERISTICS</b>						
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	$I_F=20\text{ mA}$ $I_C=25\text{ }\mu\text{A}$ $I_C=75\text{ }\mu\text{A}$ $I_C=500\text{ }\mu\text{A}$
Rise And Fall Time HOA2862-001, -002 HOA2862-003	$t_r, t_f$		15 75		$\mu\text{s}$	$V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\text{ }\Omega$ $R_L=100\text{ }\Omega$

### 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 <sup>(1)</sup>

Reverse Voltage 3 V

Continuous Forward Current 50 mA

#### DETECTOR

Collector-Emitter Voltage 30 V

Emitter-Collector Voltage 5 V

Power Dissipation 75 mW <sup>(1)</sup>

Collector DC Current 30 mA

#### TRANS. DARLINGTON

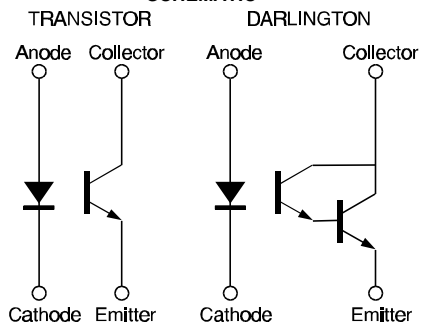
15 V

5 V

75 mW <sup>(1)</sup>

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

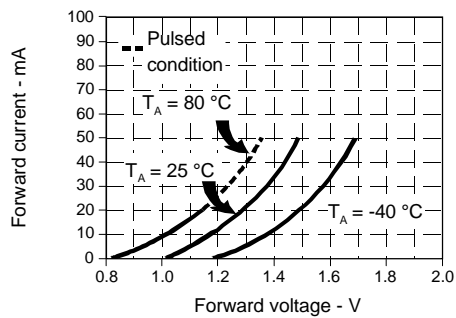


Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra\_096.ds4

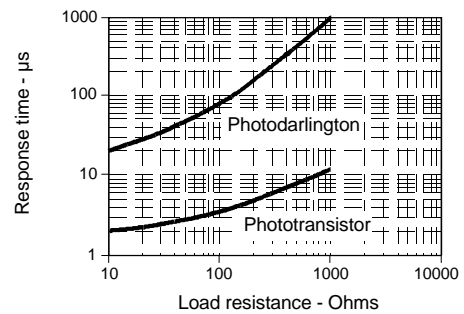


Fig. 3 Dark Current vs Temperature

gra\_303.cdr

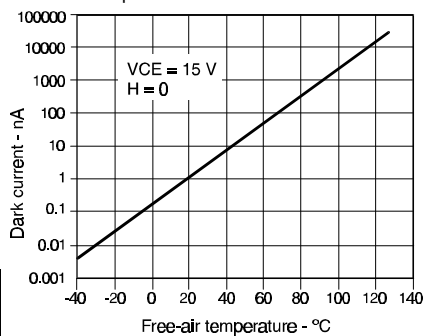
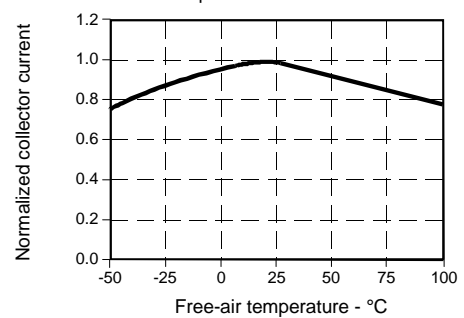


Fig. 4 Collector Current vs Ambient Temperature

gra\_095.ds4



All Performance Curves Show Typical Values

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Transmissive Sensor

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349



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