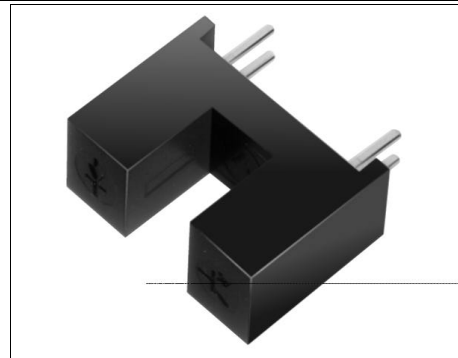


HOA1886

Transmissive Sensor

FEATURES

- Choice of phototransistor or photodarlington output
- Ambient light and dust protective filter
- 0.200 in.(5.08 mm) slot width



INFRA-76.TIF

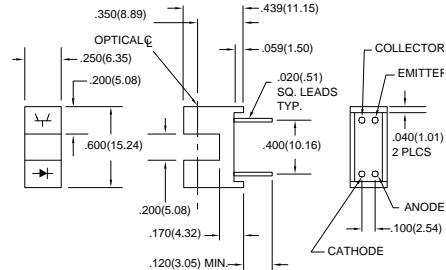
DESCRIPTION

The HOA1886 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1886-011, -012) or photodarlington (HOA1886-013) encased in a black thermoplastic housing with IR transmissive inserts which form the optical windows. This arrangement provides excellent protection against ambient light while eliminating aperture openings which could be clogged by airborne contaminants. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The HOA1886 series employs plastic molded components and has a 0.050 in.(1.27 mm) x 0.060 in.(1.52 mm) vertical aperture in front of the detector. For additional component information see SEP8506/8706, SDP8406, and SDP8106.

Housing material is polycarbonate. 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_056.dwg

HOA1886

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	$V_{(BR)CEO}$				V	$I_C=100\ \mu\text{A}$
HOA1886-011, -012		30				
HOA1886-013		15				
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	$I_E=100\ \mu\text{A}$
Collector Dark Current	I_{CEO}				nA	$V_{CE}=10\text{ V}$ $I_F=0$
HOA1886-011, -012				100		
HOA1886-013				250		
COUPLED CHARACTERISTICS						
On-State Collector Current	$I_{C(ON)}$				mA	$V_{CE}=5\text{ V}$ $I_F=20\text{ mA}$
HOA1886-011		0.3				
HOA1886-012		1.8				
HOA1886-013		4.0				
Collector-Emitter Saturation Voltage	$V_{CE(sAT)}$				V	$I_F=20\text{ mA}$ $I_C=40\ \mu\text{A}$ $I_C=230\ \mu\text{A}$ $I_C=500\ \mu\text{A}$
HOA1886-011				0.4		
HOA1886-012				0.4		
HOA1886-013				1.1		
Rise And Fall Time	t_r, t_f				μs	$V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\ \Omega$ $R_L=100\ \Omega$
HOA1886-011, -012			15			
HOA1886-013			75			

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 ⁽¹⁾
Reverse Voltage	3 V
Continuous Forward Current	50 mA

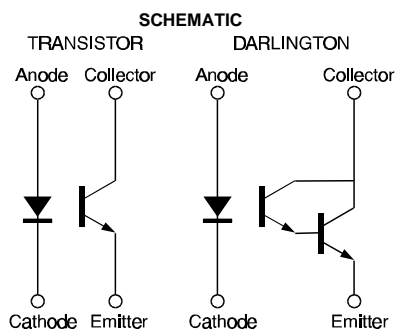
DETECTOR

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation	100 mW ⁽¹⁾

Notes

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

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



Honeywell

335

HOA1886

Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

gra_092.ds4

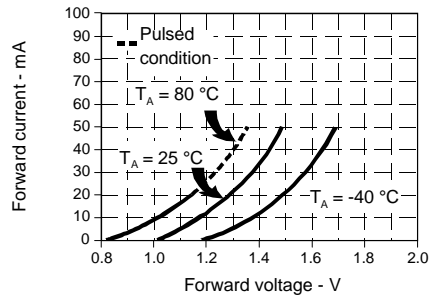


Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra_096.ds4

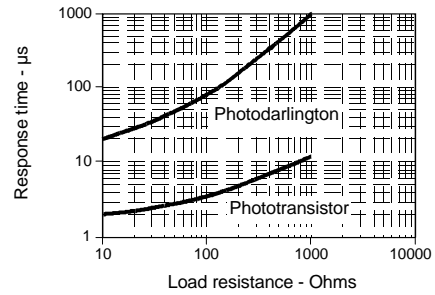


Fig. 3 Dark Current vs Temperature

gra_301.cdr

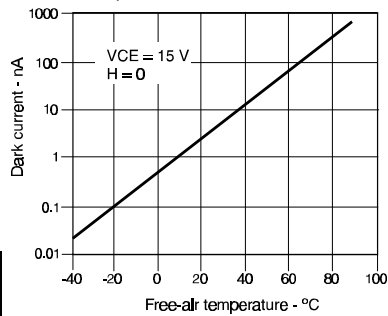
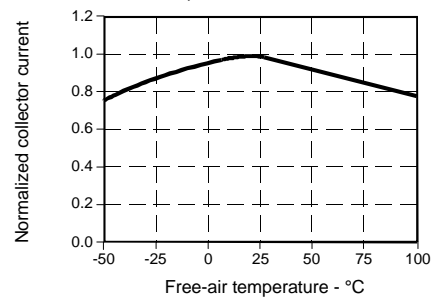


Fig. 4 Collector Current vs Ambient Temperature

gra_095.ds4



All Performance Curves Show Typical Values

HOA1886
Transmissive Sensor



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

Honeywell

337