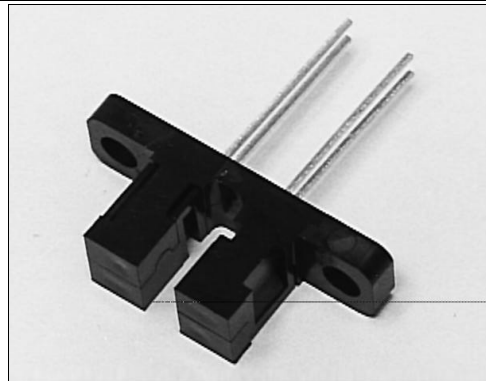


# HOA1879

## Transmissive Sensor

### FEATURES

- Phototransistor output
- Accurate position sensing
- Choice of detector aperture
- 0.125 in.(3.18 mm) slot width
- Dust protective housing



INFRA-40.TIF

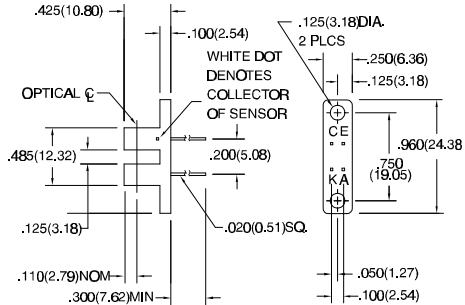
### DESCRIPTION

The HOA1879 series consists of an infrared emitting diode facing an NPN silicon phototransistor 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 HOA1879 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 HOA1879-011 and -012 have a 0.060 in.(1.52 mm) dia. detector aperture, while the HOA1879-015 has a 0.010 in.(.25 mm) x 0.040 in. (1.02 mm) vertical aperture in front of the detector. This feature is ideal for use in applications where maximum position resolution is desired. The HOA1879 series employs plastic molded components. For additional component information see SEP8506 and SDP8406.

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\_051.cdr

# HOA1879

## 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	$V_{(BR)CEO}$	30			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	$I_{CEO}$		100		nA	$V_{CE}=10\text{ V}, I_F=0$
<b>COUPLED CHARACTERISTICS</b>						
On-State Collector Current	$I_{C(ON)}$				mA	$V_{CE}=5\text{ V}$ $I_F=20\text{ mA}$
HOA1879-011		0.4				
HOA1879-012		1.8				
HOA1879-015		0.5				
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$				V	$I_F=20\text{ mA}$
HOA1879-011			0.4			$I_C=50\ \mu\text{A}$
HOA1879-012			0.4			$I_C=220\ \mu\text{A}$
HOA1879-015			0.4			$I_C=60\ \mu\text{A}$
Rise And Fall Time	$t_r, t_f$				$\mu\text{s}$	$V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\ \Omega$
HOA1879-011, -012, -015			15			

### 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

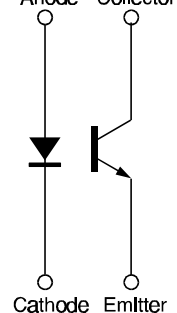
#### IR EMITTER

Power Dissipation	100 mW <sup>(1)</sup>
Reverse Voltage	3 V
Continuous Forward Current	50 mA

#### DETECTOR

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation	100 mW <sup>(1)</sup>
Collector DC Current	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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# HOA1879

## Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

gra\_092.ds4

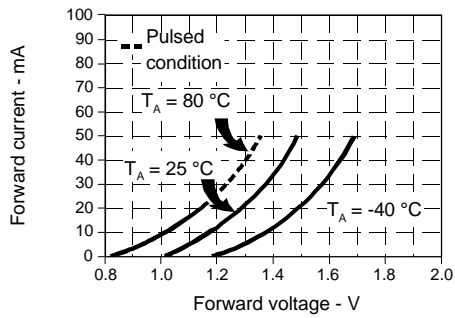


Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra\_096.ds4

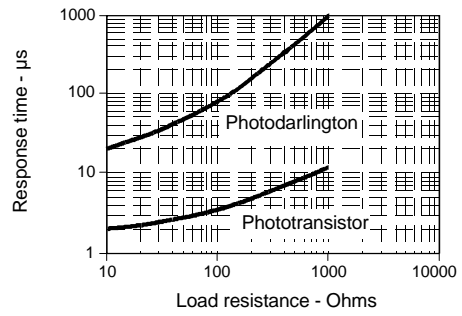


Fig. 3 Dark Current vs Temperature

gra\_301.cdr



Fig. 4 Collector Current vs Ambient Temperature

gra\_095.ds4



All Performance Curves Show Typical Values

**HOA1879**  
Transmissive Sensor

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