## **HOA1887 Transmissive Sensor**

#### FEATURES

- Choice of phototransistor or photodarlington output
- Side mount package
- Ambient light and dust protective filter
- · Accurate position sensing
- 0.010 in.(0.25mm) aperture windows
- 0.125 in.(3.18 mm) slot width
- 24.0 in.(610 mm) min. 26 AWG UL 1429 wire leads

### DESCRIPTION

The HOA1887 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1887-011, -012) or photodarlington (HOA1887-013) encased in a black thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The side mounting package is useful in applications in which the interruptive element is parallel to the mounting plane. Both emitter and detector have a 0.010 in.(0.25 mm) x 0.60 in(1.52 mm) vertical aperture. This feature is ideal for use in applications in which maximum position resolution is desired.

All devices employ a built- in strain relief for maximum wire attachment strength. The sensor housing contains IR transmissive optical windows. This arrangement provides excellent protection against ambient light while eliminating aperture openings which could be clogged by airborne contaminants. The HOA1887 series contains plastic molded components. For additional component information see SEP8506, SDP8406, and SDP8106.

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

Wire color and functions are:

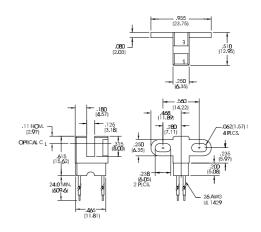
Red - IRED Anode Black - IRED Cathode White - Detector Collector



## **OUTLINE DIMENSIONS** in inches (mm)

Tolerance

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



dim\_107.CDR

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# **HOA1887**

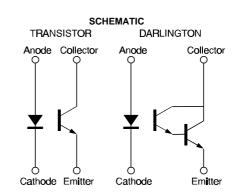
**Transmissive Sensor** 

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
IR EMITTER						
Forward Voltage	VF			1.6	V	I <sub>F</sub> =20 mA
Reverse Leakage Current	IR			10	μA	V <sub>R</sub> =3 V
DETECTOR Collector-Emitter Breakdown Voltage HOA1887-011, -012 HOA1887-013	V <sub>(BR)</sub> ceo	30 15			V	Ic=100 μΑ
Emitter-Collector Breakdown Voltage	V(BR)ECO	5.0			V	I <sub>E</sub> =100 μA
Collector Dark Current HOA1887-011, -012 HOA1887-013	ICEO			100 250	nA	V <sub>CE</sub> =10 V I <sub>F</sub> =0
COUPLED CHARACTERISTICS On-State Collector Current HOA1887-011 HOA1887-012 HOA1887-013	Ic(on)	0.3 1.8 4.0			mA	Vce=5 V I⊧=20 mA
Collector-Emitter Saturation Voltage HOA1887-011 HOA1887-012 HOA1887-013	Vce(sat)			0.4 0.4 1.1	V	I⊧=20 mA Ic=40 μA Ic=230 μA Ic=500 μA
Rise And Fall Time HOA1887-011, -012 HOA1887-013	t <sub>r</sub> , t <sub>f</sub>		15 75		μs	Vcc=5 V, Ic=1 mA R <sub>L</sub> =1000 Ω R <sub>L</sub> =100 Ω

### 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	TRANS.	DARLINGT		
Collector-Emitter Voltage	30 V	15 V		
Emitter-Collector Voltage	5 V	5 V		
Power Dissipation	100 mW (1)	100 mW (1)		
Collector DC Current	30 mA	30 mA		

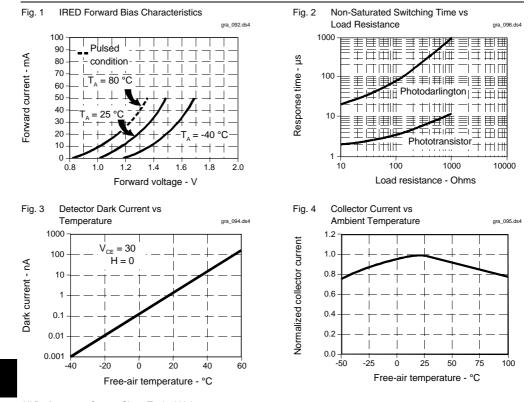


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DARLINGTON





## All Performance Curves Show Typical Values

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