

- Choice of phototransistor or photodarlington output
- 0.060 in.(1.52 mm)dia. detector aperture
- 0.125 in.(3.18 mm) slot width
- 18.0 in.(457 mm) min. 22 AWG UL 1429 wire leads

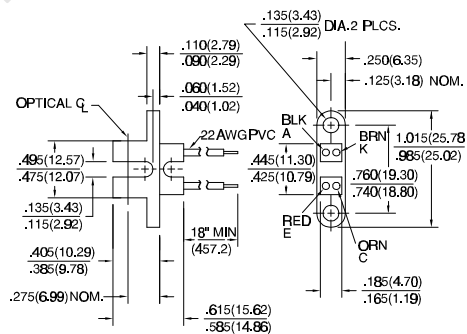


The HOA1881 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1881-011, -012) or photodarlington (HOA1881-013) encased in a black thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The lead wires of minimum length 18.0 in. (457 mm) provide alternate electrical connection when PC board mounting is not possible. The HOA1881 series employs plastic molded components. For additional component information see SEP8506, SDP8406, and SDP8106.

Wire color code and functions are:

- Black - IRED Anode
- Orange - Detector Collector
- Brown - IRED Cathode
- Red - Detector Emitter

Tolerance	3 plc decimals	$\pm 0.010(0.25)$
	2 plc decimals	$\pm 0.020(0.51)$



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

HOA1881

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 HOA1881-011, -012 HOA1881-013	$V_{(BR)CEO}$	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 HOA1881-011, -012 HOA1881-013	I_{CEO}			100 250	nA	$V_{CE}=10\text{ V}$ $I_F=0$
COUPLED CHARACTERISTICS						
On-State Collector Current HOA1881-011 HOA1881-012 HOA1881-013	$I_{C(ON)}$	0.3 1.8 4.0			mA	$V_{CE}=5\text{ V}$ $I_F=20\text{ mA}$
Collector-Emitter Saturation Voltage HOA1881-011 HOA1881-012 HOA1881-013	$V_{CE(SAT)}$			0.4 0.4 1.1	V	$I_F=20\text{ mA}$ $I_C=40\text{ }\mu\text{A}$ $I_C=230\text{ }\mu\text{A}$ $I_C=500\text{ }\mu\text{A}$
Rise And Fall Time HOA1881-011, -012 HOA1881-013	t_r, t_f		15 75		μs	$V_{CC}=5\text{ V}$, $I_C=1\text{ mA}$ $R_L=1000\text{ }\Omega$ $R_L=100\text{ }\Omega$

ABSOLUTE MAXIMUM RATINGS

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

Operating Temperature Range -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⁾

Collector DC Current 30 mA

TRANS. DARLINGTON

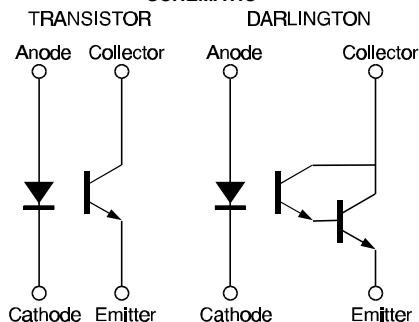
15 V

5 V

100 mW ⁽¹⁾

30 mA

SCHEMATIC



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HOA1881

Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

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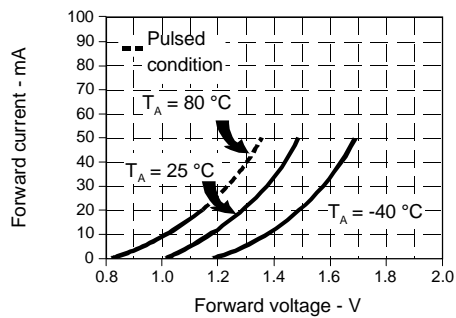


Fig. 2 Non-Saturated Switching Time vs Load Resistance

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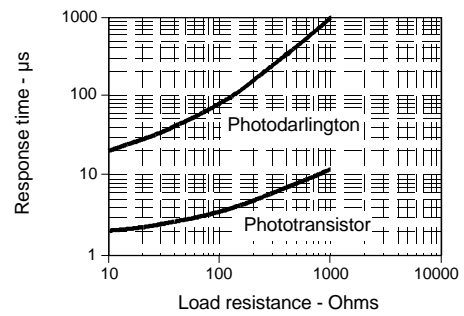


Fig. 3 Dark Current vs Temperature

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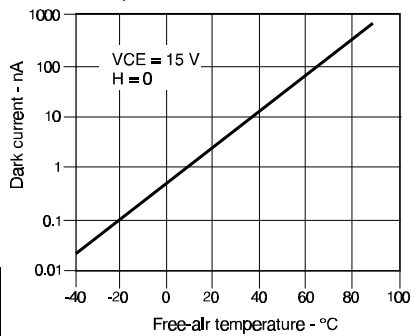
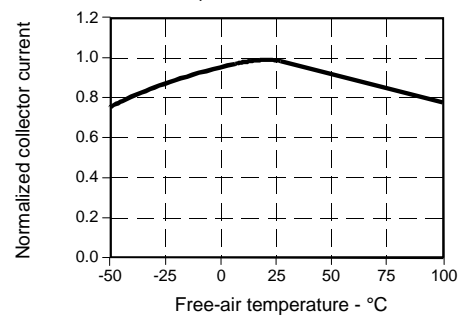


Fig. 4 Collector Current vs Ambient Temperature

gra_095.ds4



All Performance Curves Show Typical Values

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317