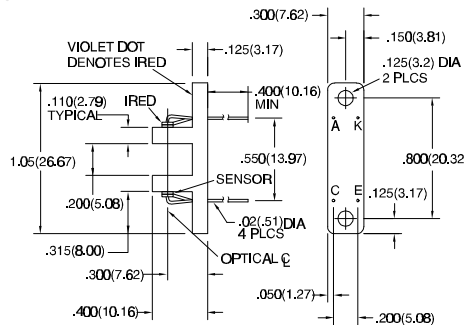


- Choice of phototransistor or photodarlington output
- Wide lead spacing
- Wide operating temperature range (- 55°C to +100°C)
- 0.200 in.(5.08 mm) slot width



The HOA1876 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1876- 001, - 002) or photodarlington (HOA1876- 003) encased in a white thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The HOA1876 series has a 0.050 in.(1.27 mm) dia. detector aperture and employs metal can packaged components. For additional component information see SE1450, SD1440, and SD1410.

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



DIM\_048.cdr

# HOA1876

## 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 HOA1876-001, -002 HOA1876-003	$V_{(BR)CEO}$	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 HOA1876-001, -002 HOA1876-003	$I_{CEO}$		100 250		nA	$V_{CE}=10\text{ V}$ $I_F=0$
<b>COUPLED CHARACTERISTICS</b>						
On-State Collector Current HOA1876-001 HOA1876-002 HOA1876-003	$I_{C(ON)}$	0.15 0.6 1.8			mA	$V_{CE}=5\text{ V}$ $I_F=30\text{ mA}$
Collector-Emitter Saturation Voltage HOA1876-001 HOA1876-002 HOA1876-003	$V_{CE(SAT)}$		0.4 0.4 1.1		V	$I_F=30\text{ mA}$ $I_C=20\text{ }\mu\text{A}$ $I_C=80\text{ }\mu\text{A}$ $I_C=230\text{ }\mu\text{A}$
Rise And Fall Time HOA1876-001, -002 HOA1876-003	$t_r, t_f$		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

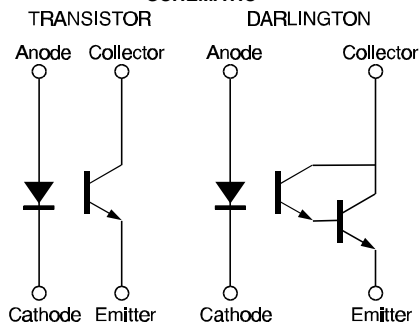
15 V

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.

**Honeywell**

# HOA1876

## Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

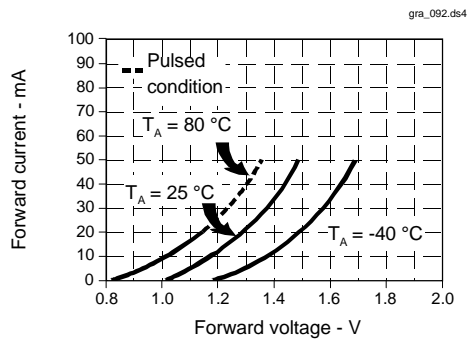


Fig. 2 Non-Saturated Switching Time vs Load Resistance

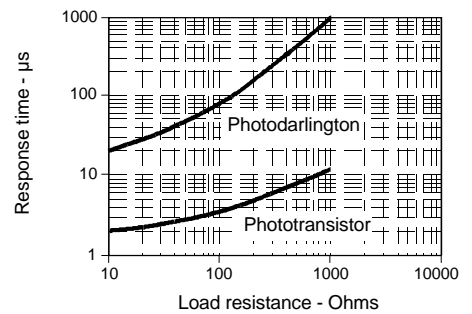


Fig. 3 Dark Current vs Temperature

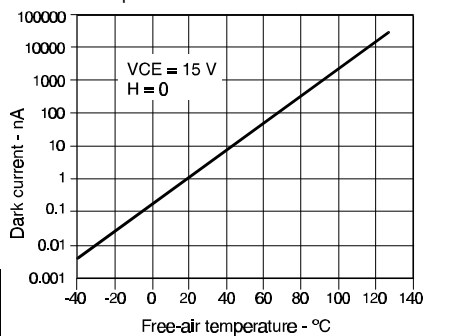
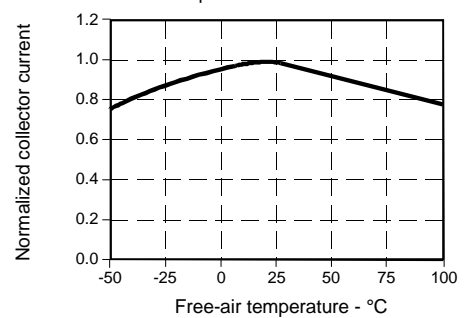


Fig. 4 Collector Current vs Ambient Temperature



All Performance Curves Show Typical Values

# HOA1876

Transmissive Sensor

---

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

# Honeywell

305