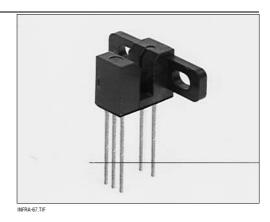
Transmissive Optoschmitt Sensor

FEATURES

- Direct TTL interface
- Buffer logic
- · Side mount package
- 0.125 in.(3.18 mm) slot width



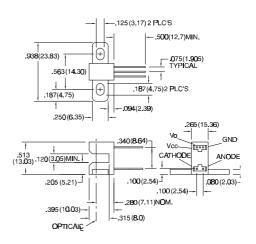
DESCRIPTION

The HOA2004 consists of an infrared emitting diode facing an Optoschmitt detector encased in a black thermoplastic housing. The photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger and an NPN output transistor with 10 $\mbox{k}\Omega$ (nominal) pullup resistor. The buffer logic provides a high output when the optical path is clear, and a low output when the path is interrupted. 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 0.020 in.(.508 mm) x 0.040 in.(1.02 mm) vertical aperture. The narrow aperture is ideal for use in applications in which maximum position resolution is desired. The HOA2004 employs plastic molded components. For additional component information see SEP8506 and SDP8600.

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

OUTLINE DIMENSIONS in inches (mm)

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



DIM_065.ds4



Transmissive Optoschmitt Sensor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
IR EMITTER						
Forward Voltage	VF			1.6	V	I _F =20 mA
Reverse Leakage Current	I _R			10	μΑ	V _R =3 V
DETECTOR						
Operating Supply Voltage	Vcc	4.5		12	V	
Low Level Supply Current	Iccl	4.0		12	mA	Vcc=5 V
Low Level Supply Current		5.0		15		Vcc=12 V
High Level Supply Current	Іссн	2.0		10	mA	Vcc=5 V
High Level Supply Current		3.0		12		Vcc=12 V
Low Level Output Voltage	Vol			0.4	V	I _{OL} =12.8 mA, I _F =0 mA
High Level Output Voltage	Voн	2.4			V	lон=0, Iғ=20 mA
Hysteresis (2)	HYST		10		%	
Propagation Delay, Low-High	t _{PLH}		5		μs	Vcc=5 V, I _F =20 mA
Propagation Delay, High-Low	t _{PHL}		5		μs	Vcc=5 V, I _F =20 mA
Rise Time	t _r		60		ns	R _L =390 Ω , C _L =50 pF
Fall Time	t _f		15		ns	R _L =390 Ω , C _L =50 pF
COUPLED CHARACTERISTICS IRED Trigger Current HOA2004-001	let			20	mA	Vcc=5 V

- Notes

 1. It is recommended that a bypass capacitor, 0.1 µF typical, be added between V_{CC} and GND near the device in order to stabilize
- power supply line.

 2. Hysteresis is defined as the difference between the operating and release threshold intensities, expressed as a percentage of the operate threshold intensity.

ABSOLUTE MAXIMUM RATINGS SCHEMATIC (25°C Free-Air Temperature unless otherwise noted) Q Vcc Operating Temperature Range -40°C to 70°C **≨10** kΩ Voltage -40°C to 85°C Storage Temperature Range regulator Soldering Temperature (5 sec) 240°C IR EMITTER -O Vo Power Dissipation 100 mW (1) Reverse Voltage 3 V Continuous Forward Current 50 mA DETECTOR 12 V (2) Supply Voltage Output Sink Current 18 mA Cathode O GND **Duration of Output** Short to V_{CC} or Ground 1.0 sec.

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

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SWITCHING WAVEFORM

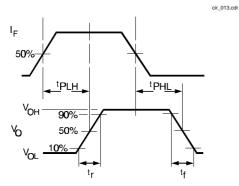
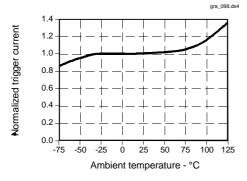
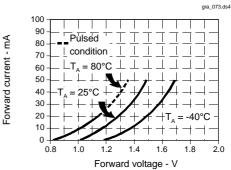


Fig. 2 IRED Trigger Current vs Temperature



All Performance Curves Show Typical Values





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