HOA2001

Transmissive Optoschmitt Sensor

FEATURES

- Direct TTL interface
- Buffer logic
- 0.060 in.(1.52 mm) dia. detector aperture
- 0.120 in.(3.05 mm) slot width
- 0.050 in.(1.27) offset pin circle detector eads



INFRA-45.TIF

DESCRIPTION

The HOA2001 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 kΩ (nominal) pull-up resistor. The buffer logic provides a high output when the optical path is clear, and a low output when the path is interrupted. The HOA2001 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
 ±0.010(0.25)

 2 plc decimals
 ±0.020(0.51)



DIM_062.ds4

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)								
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS		
IR EMITTER								
Forward Voltage	VF			1.6	V	l _F =20 mA		
Reverse Leakage Current	IR			10	μA	V _R =3 V		
DETECTOR								
Operating Supply Voltage	Vcc	4.5		10	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	lo∟=12.8 mA, I _F =0 mA		
High Level Output Voltage	Vон	2.4			V	Iон=0, I⊧=10 mA		
Hysteresis (2)	HYST		10		%			
Propagation Delay, Low-High	t PLH		5		μs	Vcc=5 V, I _F =10 mA		
Propagation Delay, High-Low	t PHL		5		μs	Vcc=5 V, I _F =10 mA		
Rise Time	tr		60		ns	RL=390 Ω, CL=50 pF		
Fall Time	t _f		15		ns	R _L =390 Ω, C _L =50 pF		
COUPLED CHARACTERISTICS								
IRED Trigger Current	IFT				mA	Vcc=5 V		
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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

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

Operating Temperature Range	-40°C to
Storage Temperature Range	-40°C to
Soldering Temperature (5 sec)	240°C
IR EMITTER	
Power Dissipation	100 mW
Reverse Voltage	3 V
Continuous Forward Current	50 mA
DETECTOR	
Supply Voltage	12 V (2)
Output Sink Current	18 mA
Duration of Output	
Short to V _{CC} or Ground	1.0 sec.



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Fig. 2 IRED Trigger Current vs Temperature







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