

Transmissive Sensor

- Phototransistor output
- Accurate position sensing
- Four mounting configurations
- 0.125 in.(3.18 mm) slot width
- Choice of detector aperture
- Choice of opaque or IR transmissive housings



The HOA086X/087X series consists of an infrared emitting diode facing an NPN silicon phototransistor encased in a black thermoplastic housing. The phototransistor switching takes place whenever an opaque object passes through the slot between emitter and detector. This series allows the user to choose from available options: (1) mounting tab configurations, (2) lead spacing, (3) electro-optical characteristics, (4) detector aperture size, and (5) housing materials.

To specify the complete product characteristics, see the PART NUMBER GUIDE.

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

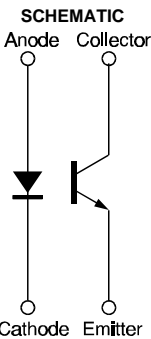


HOA086X/087X

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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 mA
Reverse Leakage Current		I _R			10	μA	V _R =3 V
DETECTOR							
Collector-Emitter Breakdown Voltage		V _{(BR)CEO}	30			V	I _C =100 μA
Emitter-Collector Breakdown Voltage		V _{(BR)ECO}	5.0			V	I _E =100 μA
Collector Dark Current		I _{CEO}			100	nA	V _{CE} =10 V, I _F =0
COUPLED CHARACTERISTICS							
On-State Collector Current		I _{C(ON)}				mA	
Parameter A (HOA0860/0865/0870/0875)			0.5				V _{CE} =10, I _F =20 mA
Parameter B (HOA0861/0866/0871/0876)			1.0				V _{CE} =5 V, I _F =10 mA
Parameter C (HOA0862/0867/0872/0877)			1.8				V _{CE} =0.6, I _F =20 mA
Collector-Emitter Saturation Voltage		V _{CE(SAT)}				V	
Parameter A (HOA0860/0865/0870/0875)					0.4		I _C =0.4 mA, I _F =20 mA
Parameter B (HOA0860/0866/0871/0876)					0.4		I _C =0.8 mA, I _F =10 mA
Parameter C (HOA0862/0867/0872/0877)					0.6		I _C =1.8 mA, I _F =20 mA
Rise And Fall Time		t _r , t _f		15		μs	V _{CC} =5 V, I _C =1 mA R _L =1000 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	
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation	100 mW ⁽¹⁾
Collector DC Current	30 mA



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

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Fig. 1 IRED Forward Bias Characteristics

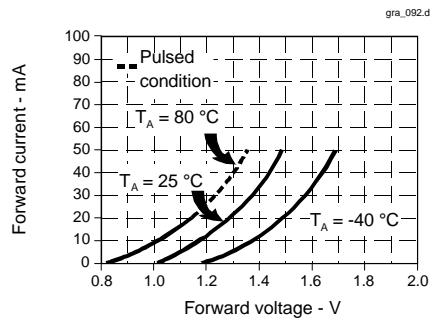


Fig. 2 Non-Saturated Switching Time vs Load Resistance

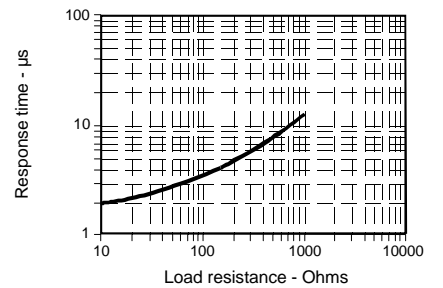


Fig. 3 Dark Current vs Temperature

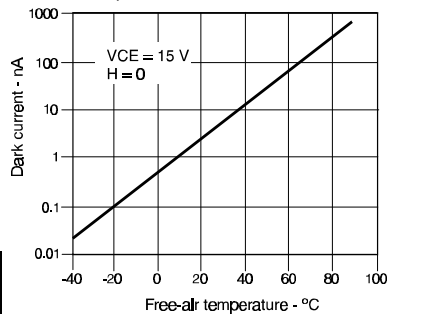
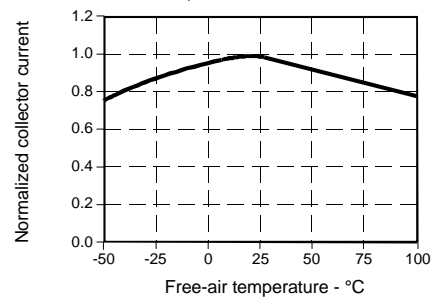


Fig. 4 Collector Current vs Ambient Temperature



All Performance Curves Show Typical Values

PART NUMBER GUIDE

HOA08XX-XXX

Housing Material

6 = Polysulfone, IR transmissive
7 = Polysulfone, opaque

Mechanical and Electrical Specifications

0 = Electrical Parameter A/lead spacing .320 in. (8.13 mm)
1 = Electrical Parameter B/lead spacing .320 in. (8.13 mm)
2 = Electrical Parameter C/lead spacing .320 in. (8.13 mm)
5 = Electrical Parameter A/lead spacing .220 in. (5.59 mm)
6 = Electrical Parameter B/lead spacing .220 in. (5.59 mm)
7 = Electrical Parameter C/lead spacing .220 in. (5.59 mm)

*0.010 in. (.25 mm) aperture available
with electrical Parameter A only

Aperture Width In Front Of Detector

*1 = 0.010 in. (0.25 mm)
5 = 0.050 in. (1.27 mm)
Aperture length is 0.060 in. (1.52 mm)

Aperture Width In Front Of IRED

5 = 0.050 in. (1.27 mm)
Aperture length is 0.060 in. (1.52 mm)

Mounting Configuration

L = Single mounting tab, emitter side
N = No mounting tabs
P = Single mounting tab, detector side
T = Two mounting tabs

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