

**HOA0865 Series Infrared Transmissive Sensor, Transistor Output, Single Mounting Tab, Emitter Side, Plastic Package**

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.

The HOA86X series utilizes an IR transmissive polysulfone housing which features smooth optical faces without external aperture openings; this feature is desirable when aperture blockage from airborne contaminants is a possibility. The HOA087X series employs an opaque polysulfone housing with aperture openings for use in applications in which maximum rejection of ambient light is important and in situations where maximum position resolution is desired. The HOA086X/087X series employs plastic molded components. For additional component information see SEP8506 and SDP8406.a

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

**Features**

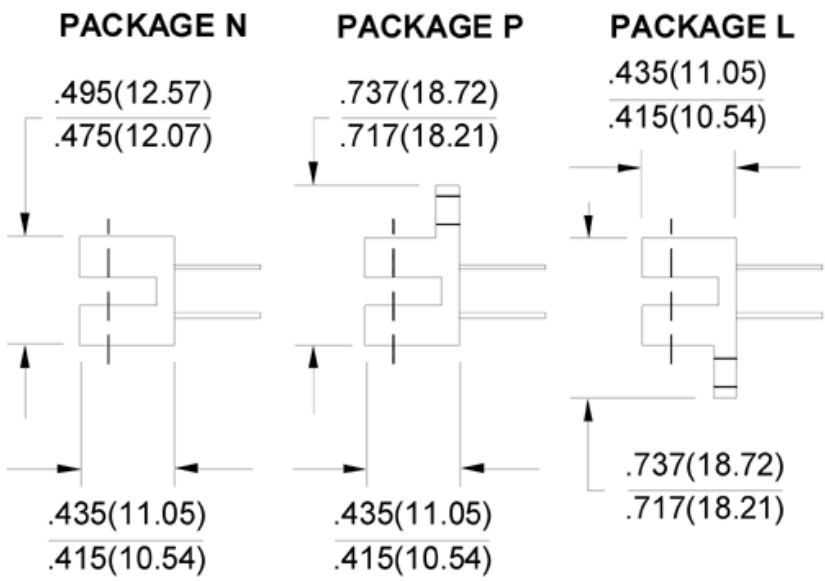
- Phototransistor output
- Accurate position sensing
- Four mounting configurations
- 0.125 in [3.18 mm] slot width
- Choice of detector aperture
- Choice of opaque or IR transmissive housings

**Product Specifications**

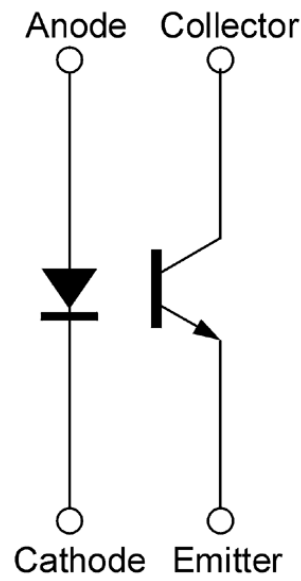
Series Name	HOA0865
Product Type	IR Switch
On-State Collector Current	0.50 mA
Output	Transistor
Mounting Configuration	Single Mounting Tab, Emitter Side
Package Components	Plastic
Package Color	Black
Forward Current	20 mA
Continuous Forward Current	50 mA
Forward Voltage	1.6 V
Reverse Breakdown Voltage	3 V
Reverse Current	10 $\mu$ A
Rise and Fall Time	15 $\mu$ s
Power Dissipation	100 mW
Operating Temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Dark Current	100 nA
Collector DC Current	30 mA
Collector-Emitter Breakdown Voltage	30 V
Emitter-Collector Breakdown Voltage	5 V
Collector-Emitter Saturation Voltage	0.4 V

Availability	Global
Sensor Aperture	1,52 mm x 1,27 mm [0.060 in x 0.050 in]
Slot Width	3,18 mm [0.125 in]

Dimensions



Schematic



# HOA086X/087X

## Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

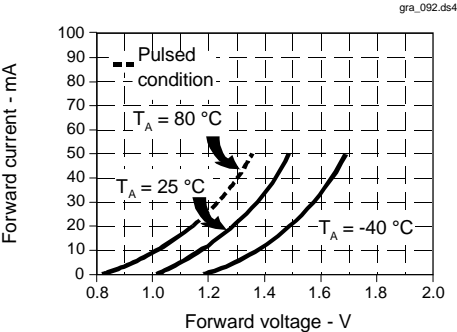


Fig. 2 Non-Saturated Switching Time vs Load Resistance

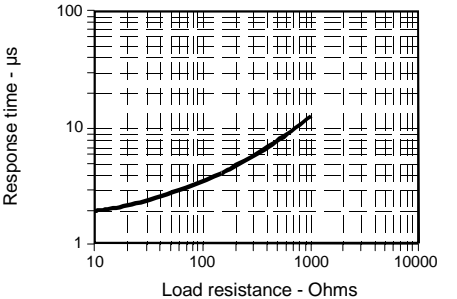


Fig. 3 Dark Current vs Temperature

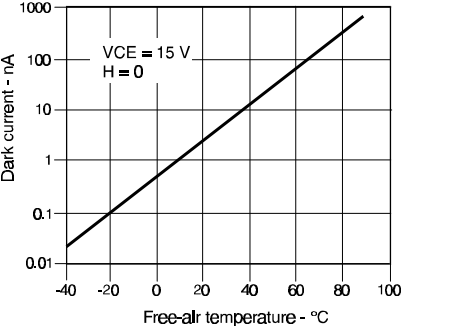
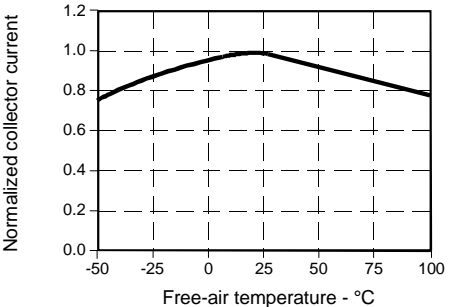


Fig. 4 Collector Current vs Ambient Temperature



All Performance Curves Show Typical Values

### PART NUMBER GUIDE

#### 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

### HOA08XX-XXX

#### 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