Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!
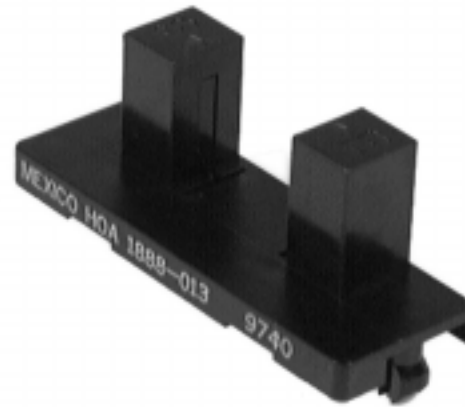
Contact us

Infrared Assemblies
Wide Gap Transmissive Sensor

HOA1888 Series

FEATURES
- Choice of phototransistor or photodarlington output
- Visible ambient light and dust protective filter
- 12 mm (0.47 in.) slot width
- Snap-in housing

The HOA1888 Series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA1888-011) or photodarlington (HOA1888-013) encased in a black thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Both emitter and detector have 1,52 mm (0.060 in.) x 1,52 mm (0.060 in.) vertical apertures.

The sensor housing contains IR (Infrared) transmissive optical windows. This arrangement provides excellent protection against visible ambient light while eliminating aperture openings which could be clogged by airborne contaminants.

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

Infrared Assemblies

Wide Gap Transmissive Sensor

HOA1888 Series

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	**TRANSISTOR**	**DARLINGTON**
Collector-Emitter Voltage	30 V	15 V
Emitter Collector Voltage	5 V	5 V
Power Dissipation	100 mW[1]	100 mW[1]
Collector DC Current	30 mA	30 mA

Note:
1. Derate linearly at 0.78 mW/°C above 25°C.

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
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	$V_{(BR)CEO}$				V	I_C=100 µA
HOA1888-011		30				
HOA1888-013		15				
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	I_E=100 µA
Collector Dark Current	I_{CEO}				nA	V_{CE}=10 V
HOA1888-011				100		I_F=0
HOA1888-013				250		
COUPLED CHARACTERISTICS						
On-State Collector Current	$I_{C(ON)}$				mA	V_{CE}=5 V
HOA1888-011		0.5				I_F=20 mA
HOA1888-013		2.0				
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$				V	I_F=20 mA
HOA1888-011				0.4		I_C=60 µA
HOA1888-013				1.1		I_C=250 µA
Rise And Fall Time	t_r, t_f				µs	V_{CC}=5 V, I_C=1 mA
HOA1888-011			15			R_L=1000 Ω
HOA1888-013			75			R_L=100 Ω

For application help: call 1-800-537-6945

Infrared Assemblies

Wide Gap Transmissive Sensor

HOA1888 Series

SCHEMATIC

TRANSISTOR   DARLINGTON

Anode Collector   Anode   Collector

Cathode Emitter   Cathode   Emitter
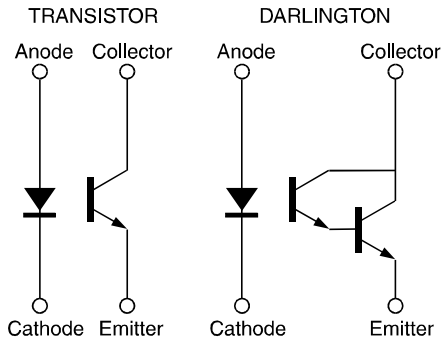
Figure 1: IRED Forward Bias Characteristics

Pulsed condition

$T_A = 80\ °C$

$T_A = 25\ °C$

$T_A = -40\ °C$

Forward current - mA

Forward voltage - V

Figure 2: Non-saturated Switching Time vs Load Resistance

Photodarlington

Phototransistor

Response time - μs

Load resistance - Ohms

Figure 3: Detector Dark Current vs Temperature

$VCE = 15\ V$
$H = 0$

Dark current - nA

Free-air temperature - °C
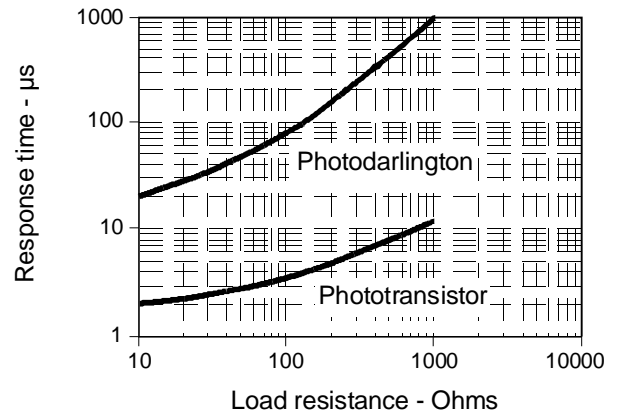
Figure 4: Collector Current vs Ambient Temperature

Normalized collector current

Free-air temperature - °C
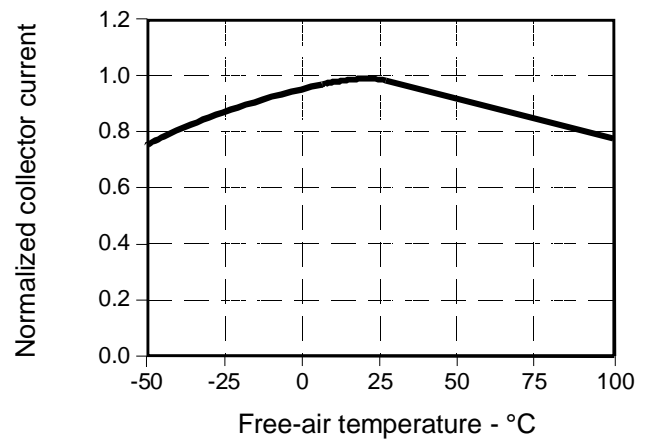
Infrared Assemblies

Wide Gap Transmissive Sensor

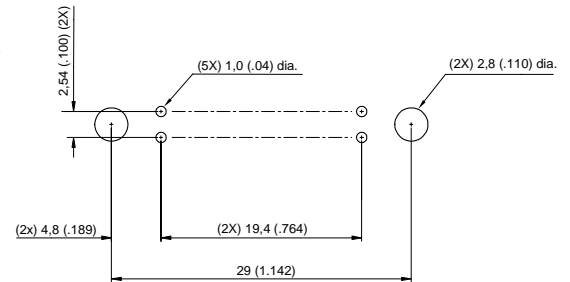### HOA1888 Series

ORDER GUIDE

Catalog Listing	Description
HOA1888-011	Wide Gap Transmissive Sensor, Phototransistor
HOA1888-013	Wide Gap Transmissive Sensor, Photodarlington

OUTLINE DIMENSIONS mm (in.) (for reference only)

RECOMMENDED PCB MOUNTING HOLE DIMENSIONS mm (in.)
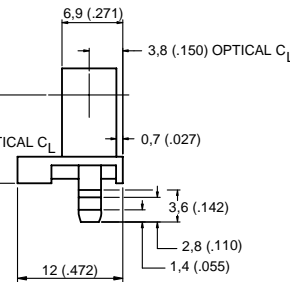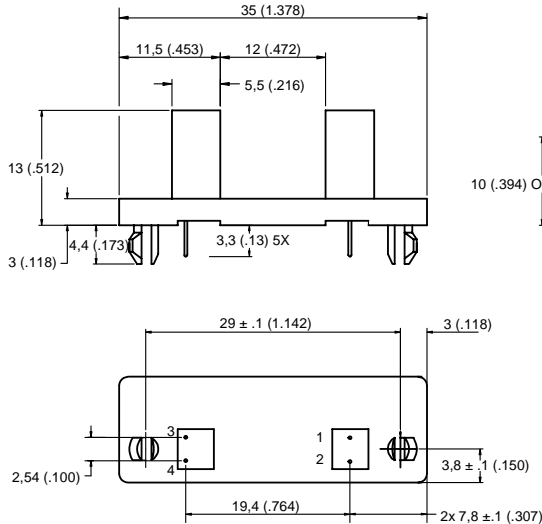
LEADS:
1. ANODE   3. EMITTER
2. CATHODE   4. COLLECTOR

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective material and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during that period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance, personally, through our literature, and through the Honeywell website, it is up to the customer to determine the suitability of the product in the application.

Specifications may change at any time without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

SALES AND SERVICE

MICRO SWITCH Sensing and Control serves its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact a nearby sales office or call:

TELEPHONE
1-800-537-6945 (USA)
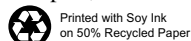1-800-737-3360 (Canada)
1-815-235-6847 (International)

FAX
1-815-235-6545 (USA)

INTERNET
www.honeywell.com/sensing
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