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!

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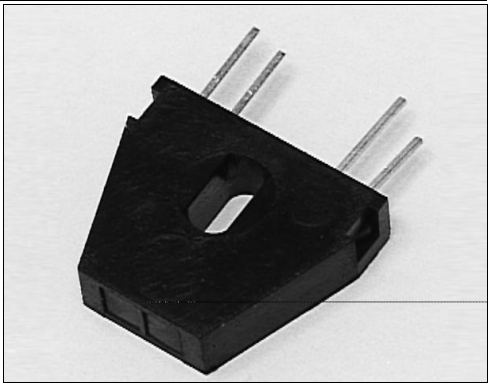
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

HOA0708/0709

Reflective Sensor

FEATURES

- Choice of phototransistor or photodarlington output
- Focused for maximum response
- Ambient light and dust protective filter
- Adjustable mounting slot



INFRA-56.TIF

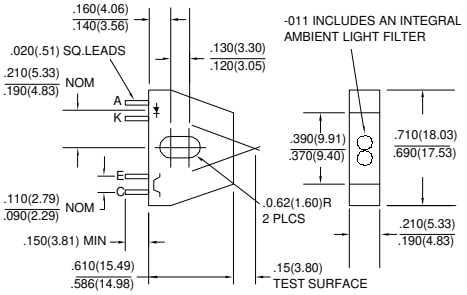
DESCRIPTION

The HOA0708/0709 series consists of an infrared emitting diode and an NPN silicon phototransistor (HOA0708- 001, - 011) or photodarlington (HOA0709- 001, - 011) encased side- by- side on converging optical axes in a black thermoplastic housing. The detector responds to radiation from the IRED only when a reflective object passes within its field of view. The HOA0708- 011 and HOA0709- 011 employ an IR transmissive filter to minimize the effects of visible ambient light and provide a smooth optical face which prevents the accumulation of airborne contaminants in the optical path. The HOA0708/0709 series employs plastic molded components. For additional component information see SEP8505, SDP8405, and SDP8105.

Housing material is polycarbonate. 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)



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HOA0708/0709

Reflective Sensor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

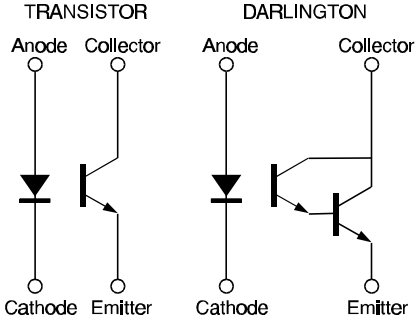
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
IR EMITTER						
Forward Voltage	V_F			1.6	V	I_F=20 mA
Reverse Leakage Current	I_R			10	µA	V_R=3 V
DETECTOR						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$				V	I_C=100 µA
HOA0708-001, -011		30				
HOA0709-001, -011		15				
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	I_E=100 µA
Collector Dark Current	I_{CEO}				nA	V_{CE}=10 V
HOA0708-001, -011				100		I_F=0
HOA0709-001, -011				250		
COUPLED CHARACTERISTICS						
On-State Collector Current	$I_{C(ON)}$					V_{CE}=5 V
HOA0708-001, -011		0.2				I_F=40 mA
HOA0709-001, -011		1.0				(1)
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$				V	I_F=40 mA (1)
HOA0708-001, -011				0.4		I_C=30 µA
HOA0709-001, -011				1.1		I_C=125 µA
Rise And Fall Time	t_r, t_f				µs	V_{CC}=5 V, I_C=1 mA
HOA0708-001, -011			15			R_L=1000 Ω
HOA0709-001, -011			75			R_L=100 Ω

Notes
1. Test surface is Eastman Kodak neutral white test card with 90% diffuse reflectance located 0.15 in. (3.80 mm) from the front surface of the device.

ABSOLUTE MAXIMUM RATINGS

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	70 mW (1)	
Reverse Voltage	3 V	
Continuous Forward Current	50 mA	
DETECTOR	**TRANS.**	**DARLINGTON**
Collector-Emitter Voltage	30 V	15 V
Emitter-Collector Voltage	5 V	5 V
Power Dissipation	70 mW (1)	70 mW (1)
Collector DC Current	30 mA	30 mA

SCHEMATIC



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HOA0708/0709

Reflective Sensor

Fig. 1 IRED Forward Bias Characteristics

gra_073.ds4

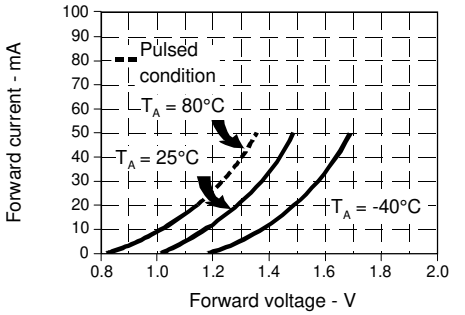


Fig. 2 Non-Saturated Switching Time vs Load Resistance

gra_079.ds4

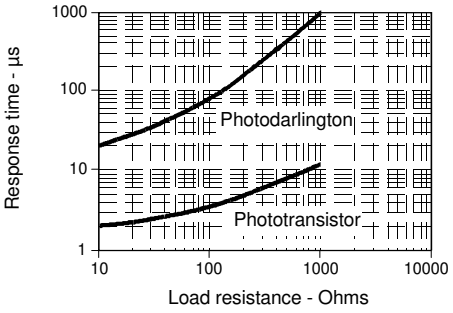


Fig. 3 Dark Current vs Temperature

gra_301.cdr

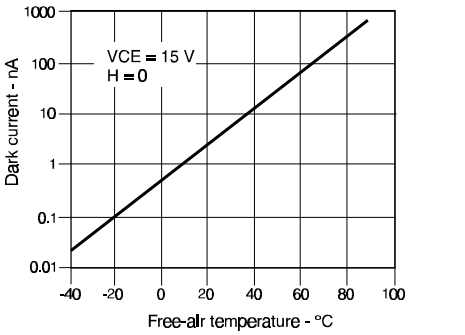


Fig. 4 Collector Current vs Ambient Temperature

gra_076.ds4

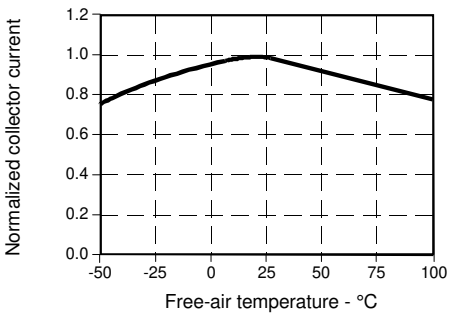


Fig. 5 Collector Current vs Distance to Reflective Surface

gra_080.ds4

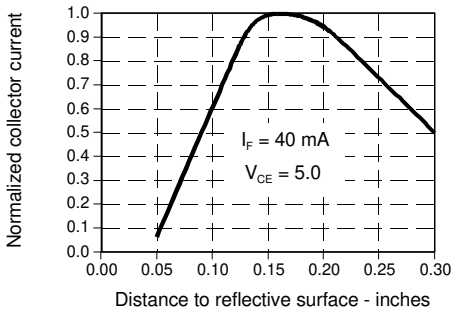
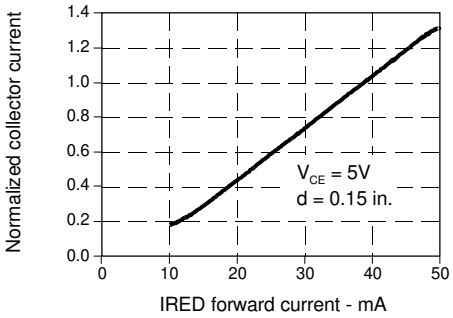


Fig. 6 Collector Current vs IRED Forward Current

gra_081.ds4



All Performance Curves Show Typical Values

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