

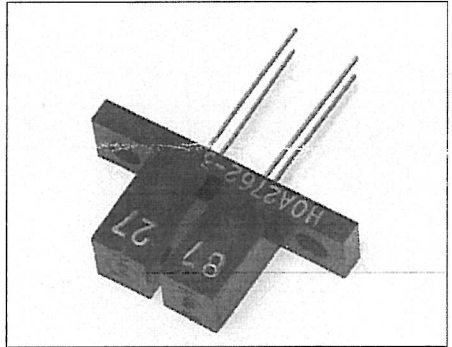
HOA2762

Transmissive Sensor

Not recommended
for new designs

FEATURES

- Choice of phototransistor or photodarlington output
- Wide operating temperature range (-55°C to +100°C)
- Deep slot package
- Accurate position sensing
- 0.060 in.(1.52 mm) slot width



INFRA-48.TIF

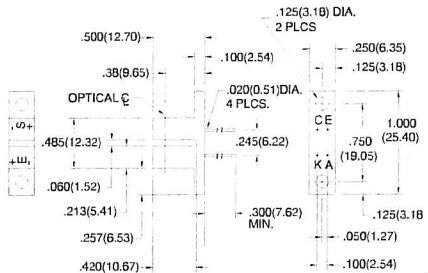
DESCRIPTION

The HOA2762 series consists of an infrared emitting diode facing an NPN silicon phototransistor (HOA2762-001, -002) or photodarlington (HOA2762-003) encased in a black thermoplastic housing. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. The HOA2762 series employs metal can packaged components and has a 0.007 in.(.178 mm) x 0.040 in.(1.02 mm) vertical aperture in front of the detector. The narrow detector aperture is ideal for use in applications in which the maximum rejection of ambient light is important and in situations where maximum position resolution is desired. For additional component information see SE1450, SD1440, and SD1410.

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



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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	$I_F=20\text{ mA}$
Reverse Leakage Current	I_R			10	μA	$V_R=3\text{ V}$
DETECTOR						
Collector-Emitter Breakdown Voltage HOA2762-001, -002 HOA2762-003	$V_{(BR)CEO}$	30 15			V	$I_C=100\ \mu\text{A}$
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5.0			V	$I_E=100\ \mu\text{A}$
Collector Dark Current HOA2762-001, -002 HOA2762-003	I_{CDO}			100 250	nA	$V_{CE}=10\text{ V}$ $I_F=0$
COUPLED CHARACTERISTICS						
On-State Collector Current HOA2762-001 HOA2762-002 HOA2762-003	$I_{C(ON)}$	0.1 1.0 2.0			mA	$V_{CE}=5\text{ V}$ $I_F=20\text{ mA}$
Collector-Emitter Saturation Voltage HOA2762-001 HOA2762-002 HOA2762-003	$V_{CE(SAT)}$			0.4 0.4 1.1	V	$I_F=20\text{ mA}$ $I_C=13\ \mu\text{A}$ $I_C=125\ \mu\text{A}$ $I_C=250\ \mu\text{A}$
Rise And Fall Time HOA2762-001, -002 HOA2762-003	t_r, t_f		15 75		μs	$V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\ \Omega$ $R_L=100\ \Omega$

ABSOLUTE MAXIMUM RATINGS

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

Operating Temperature Range	-55°C to 100°C
Storage Temperature Range	-55°C to 125°C
Soldering Temperature (10 sec)	260°C

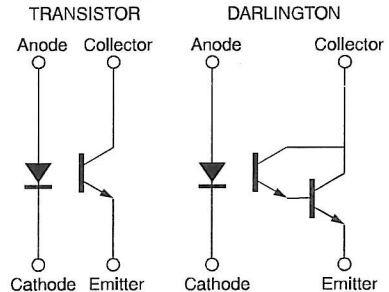
IR EMITTER

Power Dissipation	75 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	75 mW ⁽¹⁾	75 mW ⁽¹⁾
Collector DC Current	30 mA	30 mA

SCHEMATIC



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Fig. 1 IRED Forward Bias Characteristics

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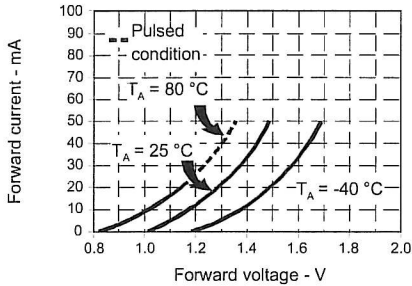


Fig. 2 Non-Saturated Switching Time vs Load Resistance

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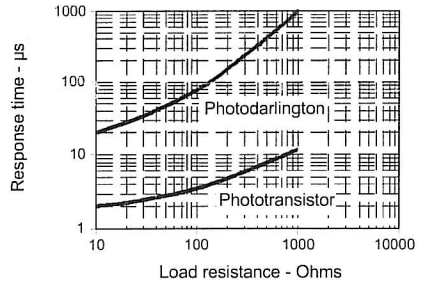


Fig. 3 Dark Current vs Temperature

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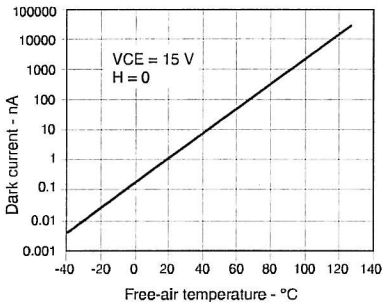
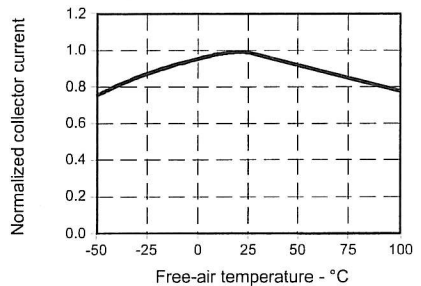


Fig. 4 Collector Current vs Ambient Temperature

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All Performance Curves Show Typical Values