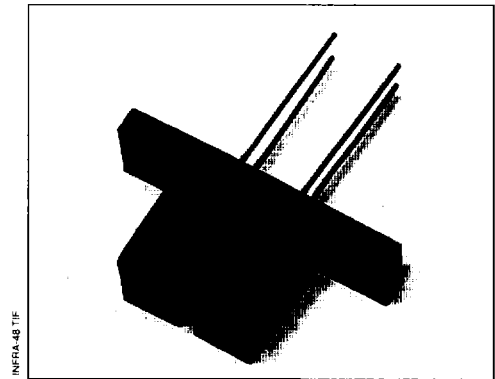


Transmissive Sensor

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



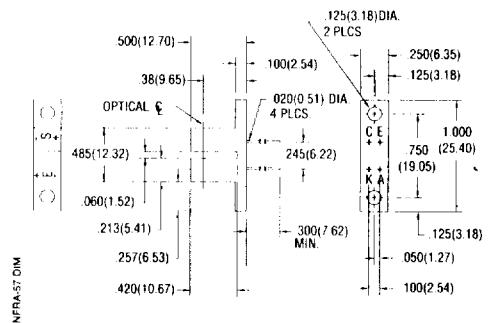
DESCRIPTION

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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HOA2762

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

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

Collector-Emitter Voltage 30 V

Emitter-Collector Voltage 5 V

Power Dissipation 75 mW⁽¹⁾

Collector DC Current 30 mA

DARLINGTON

15 V

5 V

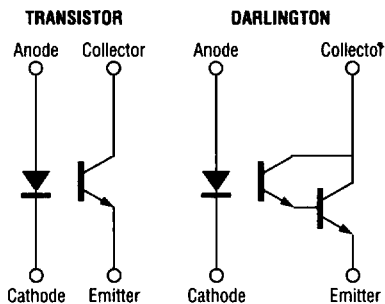
75 mW⁽¹⁾

30 mA

Notes

1. Derate linearly at 0.71 mW/°C above 25°C.

SCHEMATIC



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HOA2762

Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

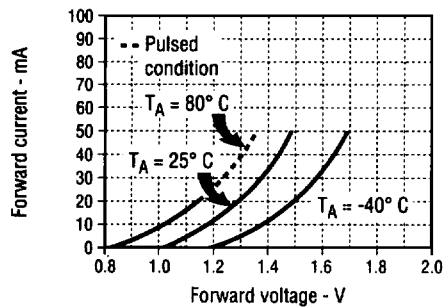


Fig. 2 Non-Saturated Switching Time vs Load Resistance

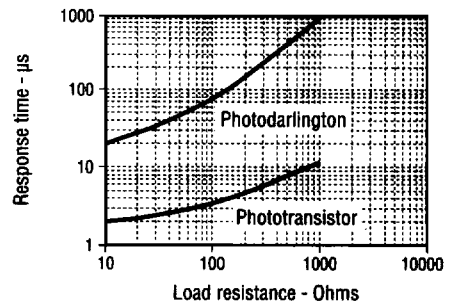


Fig. 3 Detector Dark Current vs Temperature

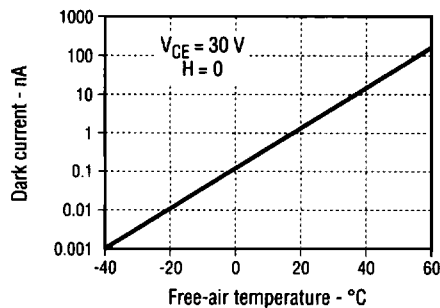
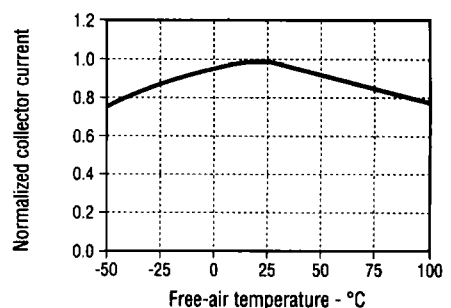


Fig. 4 Collector Current vs Ambient Temperature



All Performance Curves Show Typical Values



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