

HOA088X/089X

Transmissive Sensor

ELECTRICAL CHARACTERISTIC (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 | $V_{(BR)CEO}$ | 30 | | | 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 | I_{CEO} | | | 100 | nA | $V_{CE}=10\text{ V}, I_F=0$ |
| COUPLED CHARACTERISTICS | | | | | | |
| On-State Collector Current | $I_{C(ON)}$ | | | | mA | |
| Parameter A (HOA0880/0890) | | 0.5 | | | | $V_{CE}=10, I_F=20\text{ mA}$ |
| Parameter B (HOA0881/0891) | | 1.0 | | | | $V_{CE}=5\text{ V}, I_F=10\text{ mA}$ |
| Parameter C (HOA0882/0892) | | 1.8 | | | | $V_{CE}=0.6, I_F=20\text{ mA}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | | | | V | |
| Parameter A (HOA0880/0890) | | | | 0.4 | | $I_C=0.4\text{ mA}, I_F=20\text{ mA}$ |
| Parameter B (HOA0881/0891) | | | | 0.4 | | $I_C=0.8\text{ mA}, I_F=10\text{ mA}$ |
| Parameter C (HOA0882/0892) | | | | 0.6 | | $I_C=1.8\text{ mA}, I_F=20\text{ mA}$ |
| Rise And Fall Time | t_r, t_f | | 15 | | μs | $V_{CC}=5\text{ V}, I_C=1\text{ mA}$ $R_L=1000\ \Omega$ |

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

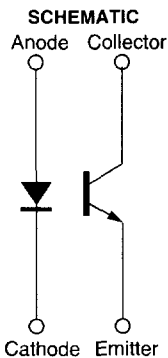
| | |
|----------------------------|-----------------------|
| Power Dissipation | 100 mW ⁽¹⁾ |
| Reverse Voltage | 3 V |
| Continuous Forward Current | 50 mA |

DETECTOR

| | |
|---------------------------|-----------------------|
| Collector-Emitter Voltage | 30 V |
| Emitter-Collector Voltage | 5 V |
| Power Dissipation | 100 mW ⁽¹⁾ |
| Collector DC Current | 30 mA |

Notes

1. Derate linearly 0.78 mW/°C above 25°C.



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Transmissive Sensor

Fig. 1 IRED Forward Bias Characteristics

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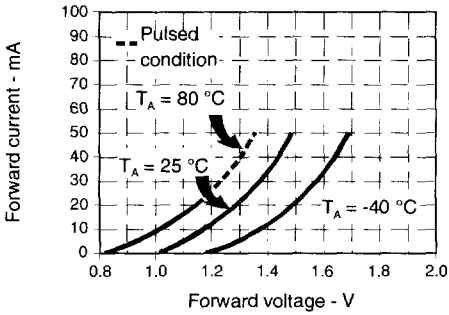


Fig. 2 Non-Saturated Switching Time vs Load Resistance

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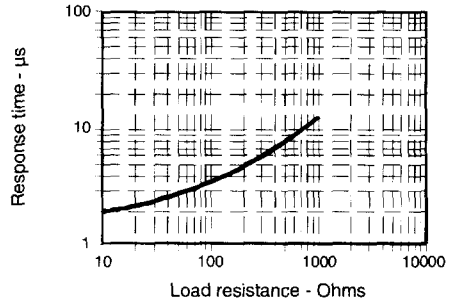


Fig. 3 Dark Current vs Temperature

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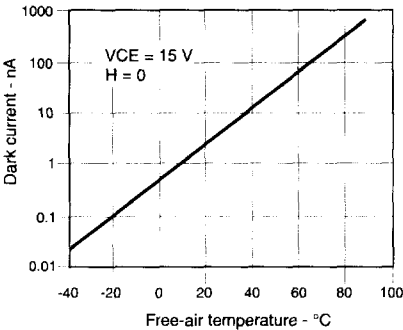
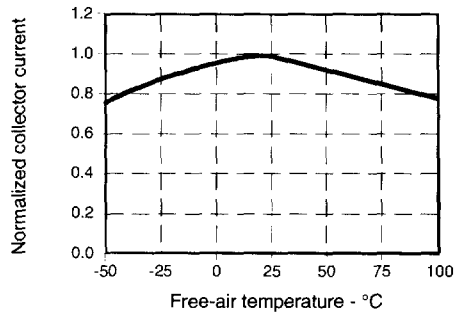


Fig. 4 Collector Current vs Ambient Temperature

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All Performance Curves Show Typical Values

PART NUMBER GUIDE

HOA08XX-XXX

Housing Material

- 8 = Polysulfone, IR transmissive
- 9 = Polysulfone, opaque

Electrical Specifications

- 0 = Parameter A
- 1 = Parameter B
- 2 = Parameter C

*0.010 in. (.25 mm) aperture available with electrical Parameter A only

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

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