

Infrared Assemblies Through Beam Modules

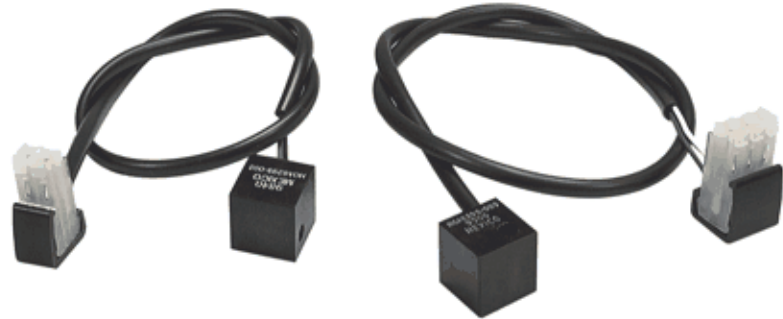
HOA6299 Series

FEATURES

- Emitter and detector in separate modules for variable spacing
- Internal current limiting resistor
- Direct TTL interface
- Buffer logic
- Fast response time
- Dust protective housing

APPLICATIONS

- Edge detection
- Position control
- Parts counting
- Mail sorting



The HOA6299 Series through beam infrared sensor modules operate as a pair. The infrared emitting diode, HOA6299-002, and the detector, HOA6299-003, are encased in black thermoplastic housings. Both the emitter and detector modules employ 24 AWG wire leads which are terminated with a Panduit CE156F24-2 connector for the HOA6299-002, and a Panduit CE156F24-3 connector for the HOA6299-003.

The detector's NPN output switches whenever an opaque object blocks the beam path. The buffer logic provides a logic high when the optical path is clear, and a logic low when the optical path is blocked. The internal current limiting resistor in the emitter module eliminates the need for an external interface circuit. The HOA6299 series employs an IR transmissive housing which features smooth optical faces without external aperture openings; this feature is desirable when aperture blockage from airborne contaminants is a possibility.

The HOA6299 Series through beam modules are tested to ensure operation at minimum separation of (63,5 mm) 2.5 in. This gap can easily be changed for applications with other spacing requirements. Housing material is IR transmissive polysulfone. Housings are soluble in chlorinated hydrocarbons and ketones. Recommended cleaning agents are methanol and isopropanol.

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ABSOLUTE MAXIMUM RATINGS (25 °C free-air temperature unless otherwise noted)

| | |
|-----------------------|-----------------------------------|
| Operating Voltage | |
| Emitter | 2 to 7 V |
| Detector | 5 to 12 V |
| Operating Temperature | |
| | 0 °C to 50 °C (32 °F to 122 °F) |
| Storage Temperature | |
| | -20 °C to 85 °C (-4 °F to 185 °F) |

CAUTION

STRESS DAMAGE

Functional operation of the device at or above "Absolute Maximum Ratings" for extended periods of time may affect reliability.

Failure to comply with these instructions may result in product damage.

ELECTRICAL CHARACTERISTICS (25 °C unless otherwise noted)

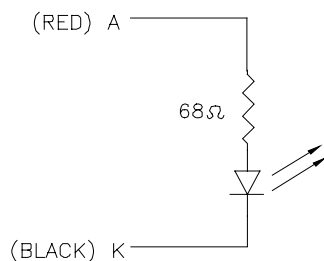
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|---------------------------|----------|-----|-----|-----|---------------|--|
| Operating Supply Voltage | V_{CC} | 4.5 | | 12 | V | $T_A=25\text{ °C}$ |
| Low Level Output Voltage | V_{OL} | | | 0.4 | V | $V_{CC}=5\text{ V}$, $I_{OH}=10\text{ mA}$ Light path blocked (Note 1) |
| High Level Output Voltage | V_{OH} | 4.5 | | | V | $V_{CC}=5\text{ V}$, $I_{OH}=0\text{ mA}$ Light path not blocked (Note 1) |
| Output Sink Current | I_{OL} | 10 | | | mA | $V_{CC}=5\text{ V}$, $V_{OL}=0.4\text{ V}$ |
| Response Time | t_{ON} | | 5 | | μs | $V_{CC}=5\text{ V}$ |

Note:

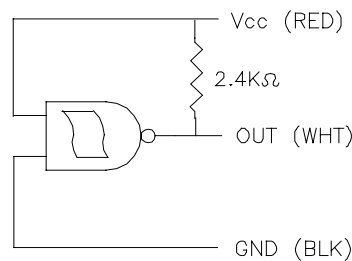
1. Emitter and detector modules are tested to ensure operation at minimum separation of 63,5 mm (2.5 in) when properly aligned.

SCHEMATIC

HOA6299-OO2



HOA6299-OO3



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Figure 1
Emitter Module Drive Current vs Applied Voltage

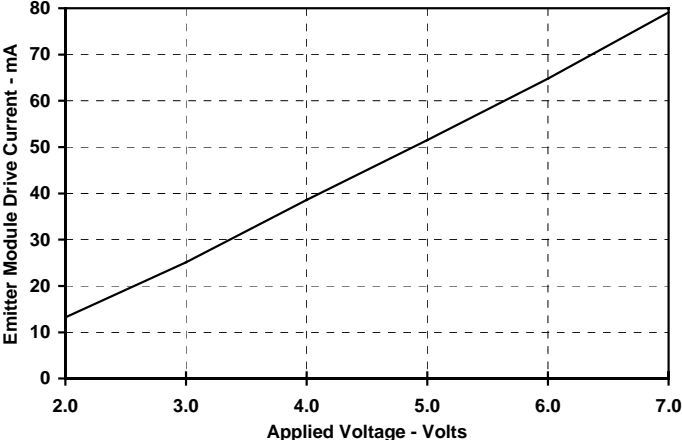
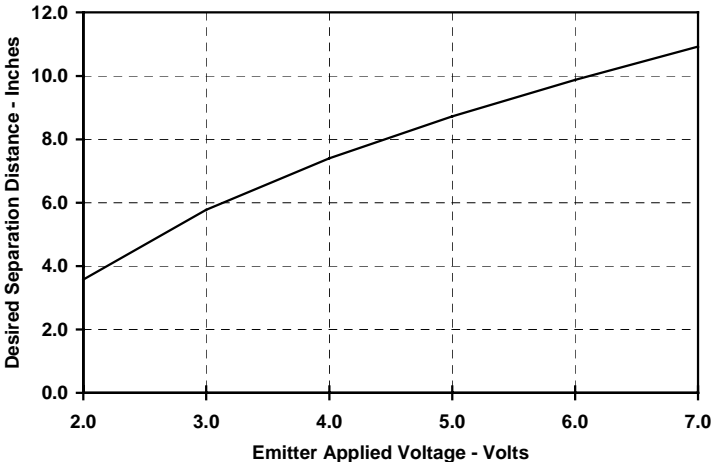


Figure 2
Desired Separation Distance vs Emitter Applied Voltage



Infrared Assemblies

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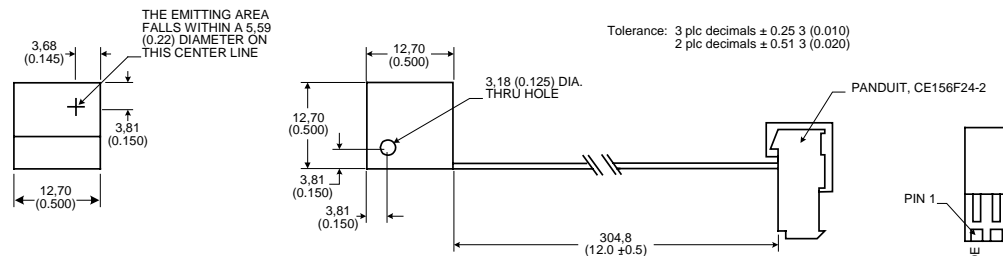
HOA6299 Series

ORDER GUIDE

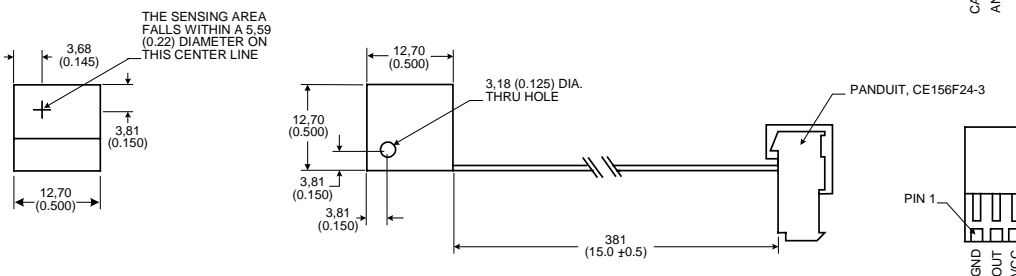
| Catalog Listing | Description |
|-----------------|----------------------------------|
| HOA6299-002 | Through beam, IR emitting diode |
| HOA6299-003 | Through beam, IR detector module |

OUTLINE DIMENSIONS (mm/in)

HOA6299-002



HOA6299-003



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006460-1-EN IL50 GLO 699 Printed in USA

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