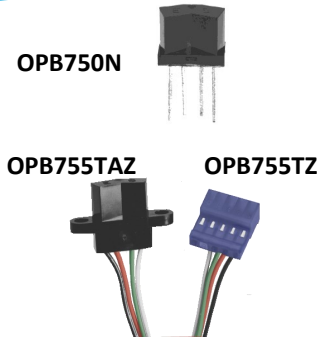


# Reflective Object Sensor

OPB750N, OPB750T  
 OPB755TZ, OPB755TAZ  
 Obsolete (OPB755NZ)



## Features:

- High contrast ratio (1,000 :1 minimum)
- Low cost plastic housing
- PCBoard mount (OPB750N, OPB750T)
- 12" (305 mm) 26 AWG wires (OPB755TZ)
- Available with no-mounting tabs "N" package
- Available with two mounting tabs "T" package

## Description:

Each sensor in the **OPB750** and **OPB755** series has a reflective assembly that features a Light Emitting Diode (LED) and phototransistor output designed to decrease low-level light, while not affecting the high-level light gain.

The **OPB750N** and **OPB750T** devices are designed for PCBoard mounting with 0.40" (10 mm) length leads. **OPB755TZ** and **OPB755TAZ** assemblies are designed for remote mounting. The **OPB755TZ** has 12" (305 mm) UL rated wire, 26 AWG wire leads that terminate into an AMP # 3-640442-5 connector. The **OPB755TAZ** has 24" (610 mm) UL rated wire, 26 AWG leads. The **OPB750T**, **OPB755TZ** and **OPB755TAZ** have two mounting tabs while the **OPB750N** has no mounting tabs.

Photologic® output versions are available with the **OPB760** and **OPB770** series.

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

## Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor
- Door sensor

| Ordering Information |                     |                  |                          |                                  |         |
|----------------------|---------------------|------------------|--------------------------|----------------------------------|---------|
| Part Number          | LED Peak Wavelength | Sensor           | Reflection Distance Inch | Lead Length                      | Tabs    |
| OPB750N              | 890 nm              | Transistor & Rbe | 0.080" (2.03 mm)         | 0.40"                            | No tabs |
|                      |                     |                  | 0.150" (3.81 mm)         |                                  |         |
|                      |                     |                  | 0.220" (5.59 mm)         |                                  |         |
| OPB750T              |                     |                  | 0.080" (2.03 mm)         |                                  | 2 tabs  |
|                      |                     |                  | 0.150" (3.81 mm)         |                                  |         |
|                      |                     |                  | 0.220" (5.59 mm)         |                                  |         |
| OPB755NZ<br>Obsolete | 890 nm              | Transistor & Rbe | 0.080" (2.03 mm)         | 12" / 26 AWG Wire with connector | No tabs |
|                      |                     |                  | 0.150" (3.81 mm)         |                                  |         |
|                      |                     |                  | 0.220" (5.59 mm)         |                                  |         |
| OPB755TZ             |                     |                  | 0.080" (2.03 mm)         |                                  | 2 tabs  |
|                      |                     |                  | 0.150" (3.81 mm)         |                                  |         |
|                      |                     |                  | 0.220" (5.59 mm)         |                                  |         |
| OPB755TAZ            |                     |                  | 0.080" (2.03 mm)         | 24" / 26 AWG Wire NO connector   |         |
|                      |                     |                  | 0.150" (3.81 mm)         |                                  |         |
|                      |                     |                  | 0.220" (5.59 mm)         |                                  |         |



RoHS

### General Note

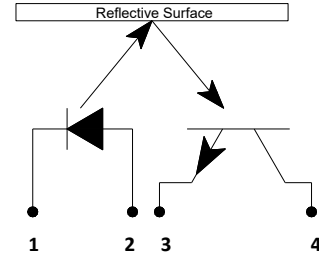
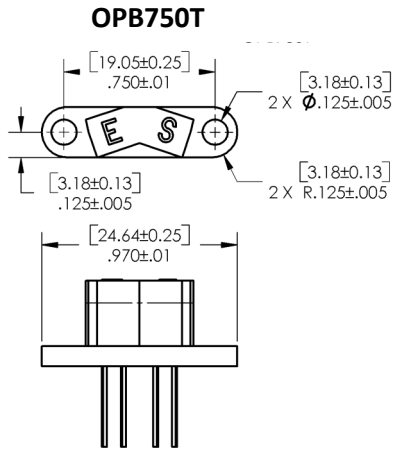
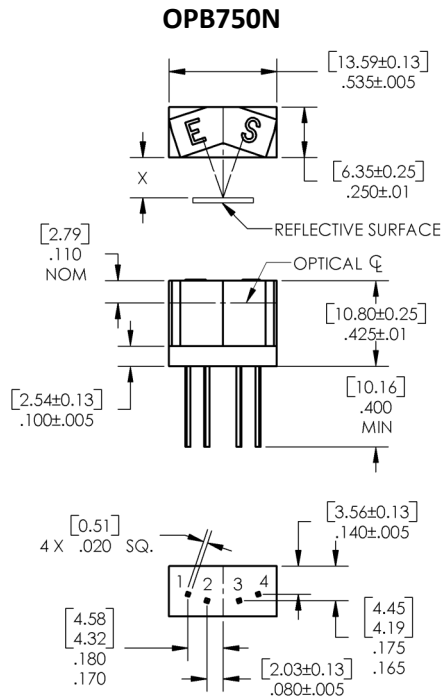
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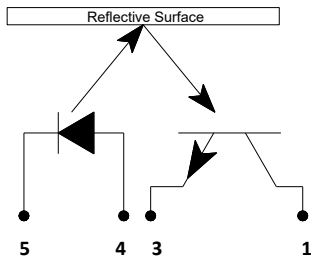
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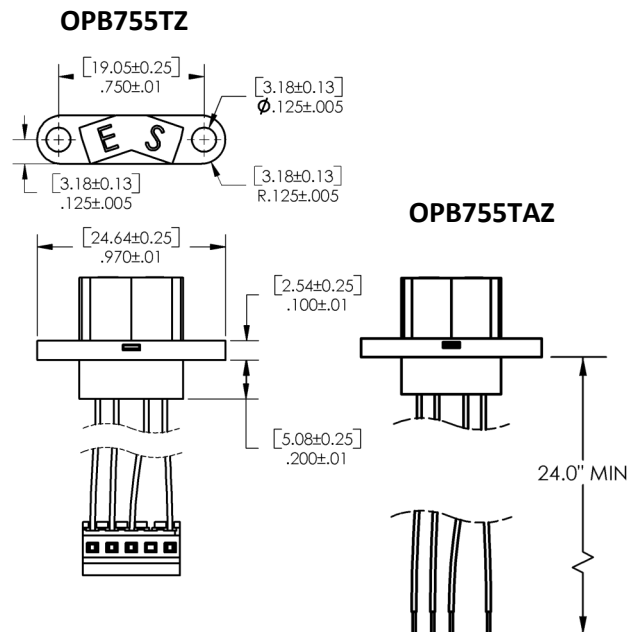


| OPB750 |             |
|--------|-------------|
| Pin #  | Description |
| 1      | Cathode     |
| 2      | Anode       |
| 4      | Collector   |
| 3      | Emitter     |

DIMENSIONS ARE IN: [MILLIMETERS]  
INCHES



| OPB755  |             |
|---------|-------------|
| Color   | Description |
| Black-5 | Cathode     |
| Red-4   | Anode       |
| White-1 | Collector   |
| Green-3 | Emitter     |



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# Reflective Object Sensor

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## Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

|  |  |
|--|--|
| Operating and Storage Temperature Range<br>OPB750N, OPB750T<br>OPB755TZ, OPB755TAZ | -40° C to + 85° C<br>-40° C to + 80° C |
| Lead Soldering Temperature <sup>(1)</sup>  | 260° C                                 |

## Input Diode

|   |        |
|---|--------|
| Forward DC Current                              | 50 mA  |
| Peak Forward Current (1 μ pulse width, 300 pps) | 1 A    |
| Reverse DC Voltage                              | 2 V    |
| Power Dissipation                               | 100 mW |

## Output Phototransistor

|                                  |        |
|----------------------------------|--------|
| Collector-Emitter Voltage        | 24 V   |
| Collector DC Current             | 30 V   |
| Power Dissipation <sup>(3)</sup> | 100 mW |

## Electrical Characteristics (T<sub>A</sub> = 25° C unless otherwise noted)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|-----------|-----|-----|-----|-------|-----------------|
|--------|-----------|-----|-----|-----|-------|-----------------|

### Input Diode (See OP240 for additional information)

|                |                 |   |   |     |    |                        |
|----------------|-----------------|---|---|-----|----|------------------------|
| V <sub>F</sub> | Forward Voltage | - | - | 1.8 | V  | I <sub>F</sub> = 40 mA |
| I <sub>R</sub> | Reverse Current | - | - | 100 | μA | V <sub>R</sub> = 2 V   |

### Output Phototransistor (see OP550 for additional information)

|                      |                                     |    |   |     |    |   |
|----------------------|-------------------------------------|----|---|-----|----|---|
| V <sub>(BR)CEO</sub> | Collector-Emitter Breakdown Voltage | 24 | - | -   | V  | I <sub>C</sub> = 100 μA                           |
| I <sub>CEO</sub>     | Collector Dark Current              | -  | - | 100 | nA | V <sub>CE</sub> = 10 V, I <sub>F</sub> = 0, H = 0 |

## Coupled

|                      |  |                   |             |             |    |  |
|----------------------|--|-------------------|-------------|-------------|----|--|
| V <sub>CE(SAT)</sub> | Saturation Voltage                         | -                 | -           | .40         | V  | I <sub>C</sub> = 150 μA, I <sub>F</sub> = 30 mA, d = 0.22"   |
| I <sub>C(OFF)</sub>  | Off-State Collector Current <sup>(5)</sup> | -                 | -           | 250         | nA | I <sub>F</sub> = 30 mA, V <sub>CE</sub> = 5 V<br>d = 0.08", 0.15", 0.22"   |
| I <sub>C(ON)</sub>   | On-State Collector Current <sup>(4)</sup>  | 500<br>375<br>250 | -<br>-<br>- | -<br>-<br>- | μA | I <sub>F</sub> = 30 mA, V <sub>CE</sub> = 5 V, d = 0.08"<br>I <sub>F</sub> = 30 mA, V <sub>CE</sub> = 5 V, d = 0.15"<br>I <sub>F</sub> = 30 mA, V <sub>CE</sub> = 5 V, d = 0.22" |

### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/° C above 25° C.
- (3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) Photocurrent is measured using an Eastman Kodak neutral white test card having 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog #E 152 7795.
- (5) I<sub>C(OFF)</sub> is the photocurrent measured with current to the input diode and a 5% reflecting surface.
- (6) All parameters tested using pulse techniques.

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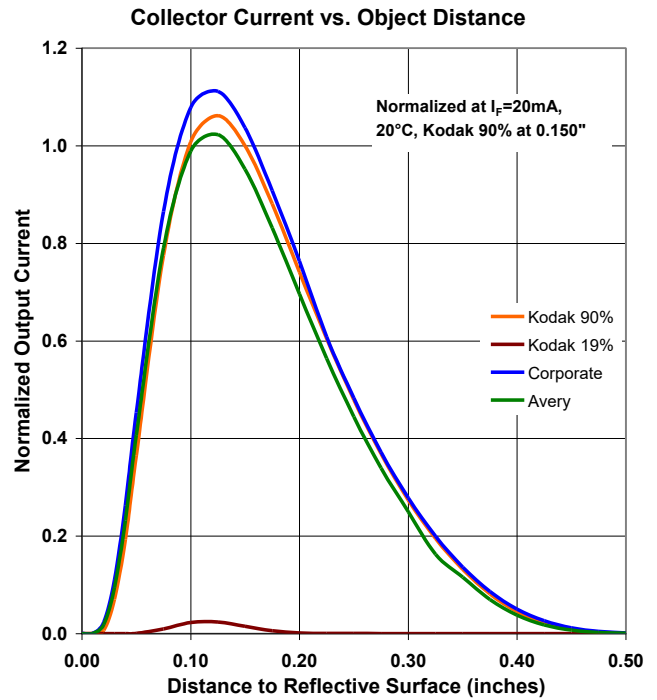
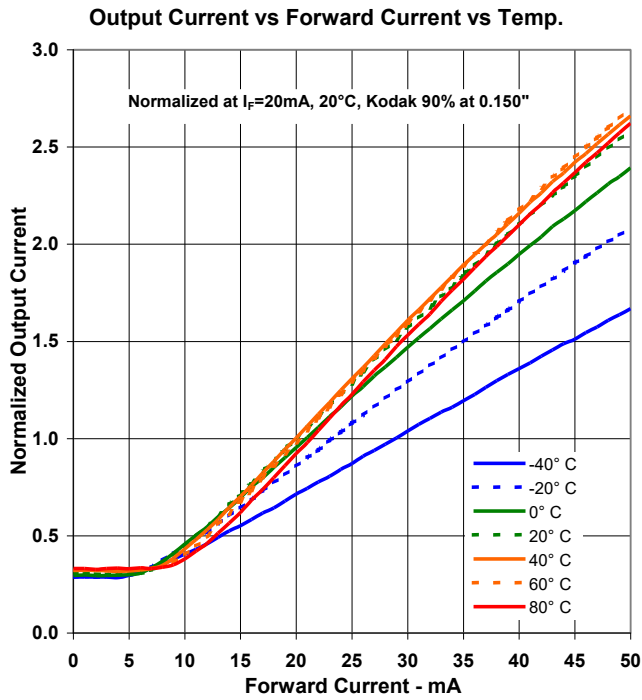
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