

# Reflective Object Sensor

OPB750N, OPB750T

OPB755NZ, OPB755TZ, OPB755TAZ



## Features:

- High contrast ratio (1,000 :1 minimum)
- Low cost plastic housing
- PCBoard mount (OPB750N, OPB750T)
- 12" (305 mm) 26 AWG wires (OPB755NZ, 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 have are designed for PCBoard mounting with 0.40" (10 mm) length leads. **OPB755NZ**, **OPB755TZ** and **OPB755TAZ** assemblies are designed for remote mounting. The **OPB755NZ** and **OPB755TZ** have 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** and **OPB755NZ** have 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             | 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)         |                                  |         |



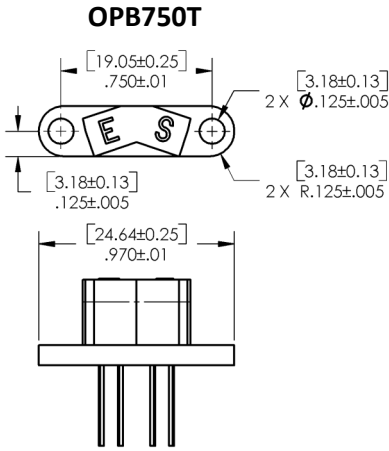
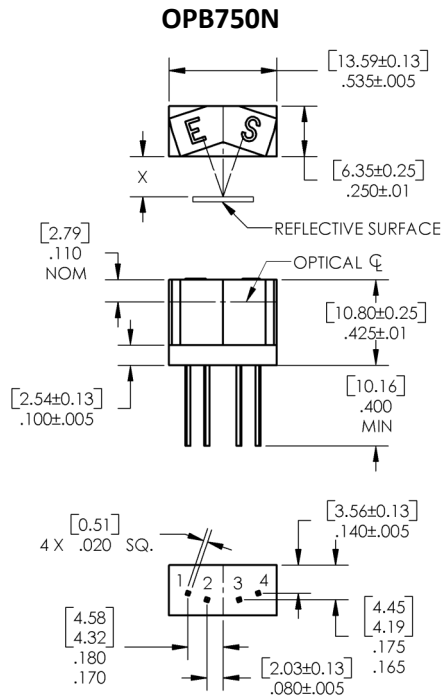
General Note  
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OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006  
Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

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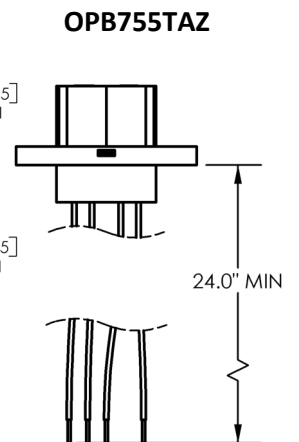
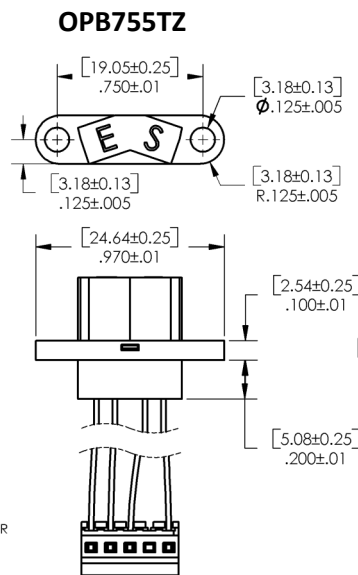
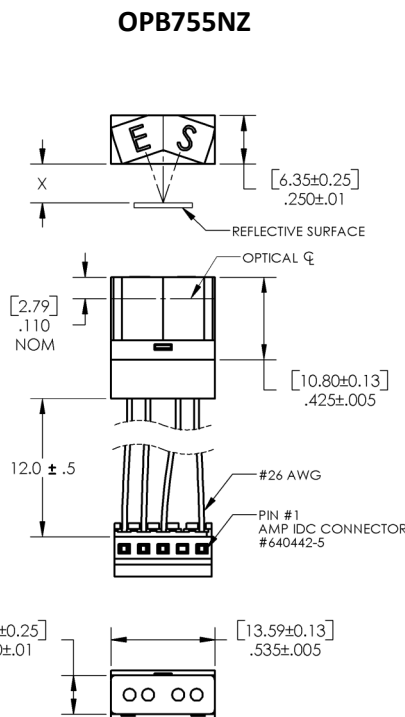
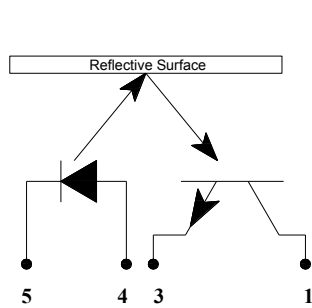
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| OPB750 |             |
|--------|-------------|
| Pin #  | Description |
| 1      | Cathode     |
| 2      | Anode       |
| 4      | Collector   |
| 3      | Emitter     |

DIMENSIONS ARE IN: [MILLIMETERS]  
INCHES



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

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| Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)                  |  |                   |             |             |               |   |
|--|--|-------------------|-------------|-------------|---------------|---|
| Operating and Storage Temperature Range<br>OPB750N, OPB750T<br>OPB755NZ, 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 $\mu$ 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 ( $T_A = 25^\circ\text{C}$ unless otherwise noted)                |  |                   |             |             |               |   |
| SYMBOL   | PARAMETER                                  | MIN               | TYP         | MAX         | UNITS         | TEST CONDITIONS   |
| Input Diode (See OP240 for additional information)   |  |                   |             |             |               |   |
| $V_F$  | Forward Voltage                            | -                 | -           | 1.8         | V             | $I_F = 40\text{ mA}$  |
| $I_R$  | Reverse Current                            | -                 | -           | 100         | $\mu\text{A}$ | $V_R = 2\text{ V}$  |
| Output Phototransistor (see OP550 for additional information)                                |  |                   |             |             |               |   |
| $V_{(BR)CEO}$  | Collector-Emitter Breakdown Voltage        | 24                | -           | -           | V             | $I_C = 100\ \mu\text{A}$  |
| $I_{CEO}$  | Collector Dark Current                     | -                 | -           | 100         | nA            | $V_{CE} = 10\text{ V}, I_F = 0, H = 0$  |
| Coupled  |  |                   |             |             |               |   |
| $V_{CE(SAT)}$  | Saturation Voltage                         | -                 | -           | .40         | V             | $I_C = 150\ \mu\text{A}, I_F = 30\text{ mA}, d = 0.22''$  |
| $I_{C(OFF)}$   | Off-State Collector Current <sup>(5)</sup> | -                 | -           | 250         | nA            | $I_F = 30\text{ mA}, V_{CE} = 5\text{ V}$<br>$d = 0.08'', 0.15'', 0.22''$   |
| $I_{C(ON)}$  | On-State Collector Current <sup>(4)</sup>  | 500<br>375<br>250 | -<br>-<br>- | -<br>-<br>- | $\mu\text{A}$ | $I_F = 30\text{ mA}, V_{CE} = 5\text{ V}, d = 0.08''$<br>$I_F = 30\text{ mA}, V_{CE} = 5\text{ V}, d = 0.15''$<br>$I_F = 30\text{ mA}, V_{CE} = 5\text{ V}, d = 0.22''$ |

**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)  $I_{C(OFF)}$  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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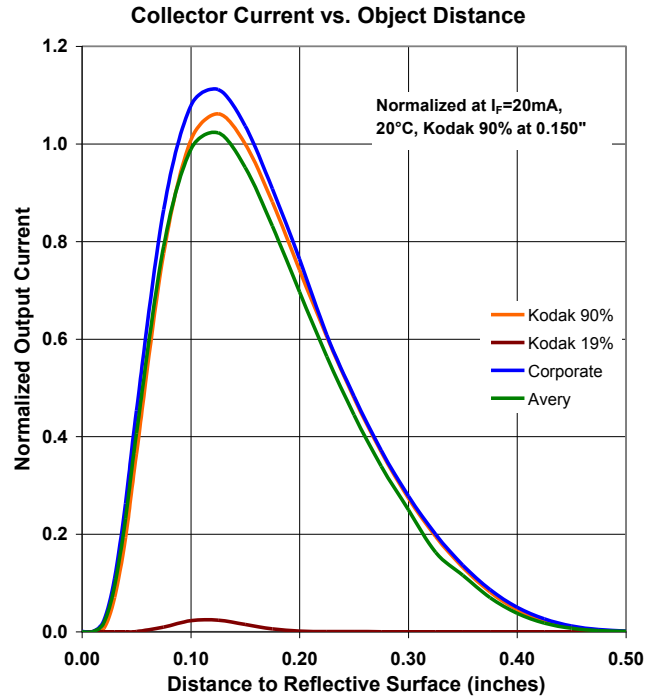
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## Performance



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#### Как с нами связаться

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