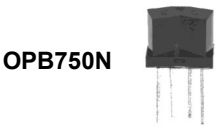
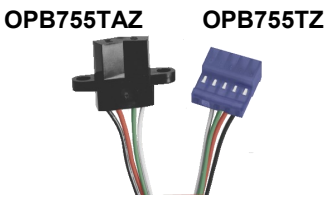
Reflective Object Sensor

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)		

RoHS

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

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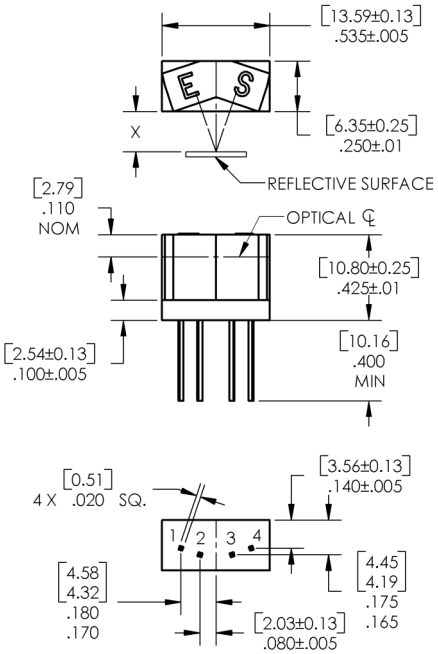
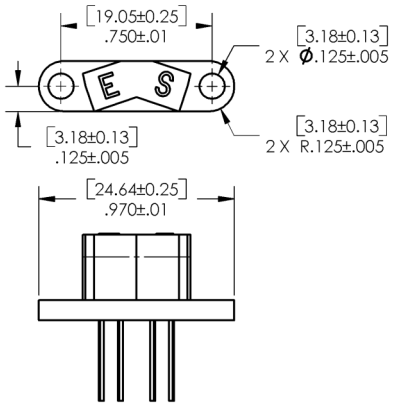
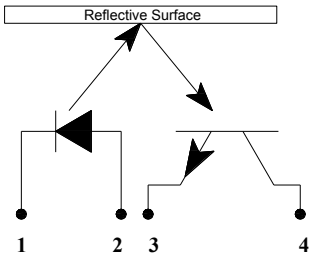
OPB750N



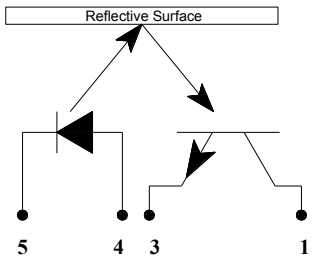
OPB750T



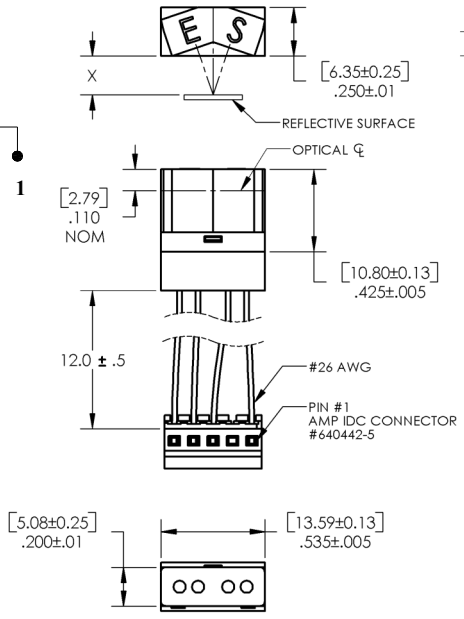


OPB750	
Pin #	**Description**
1	Cathode
2	Anode
4	Collector
3	Emitter

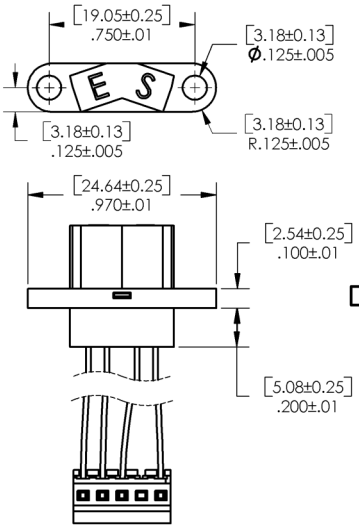
DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES



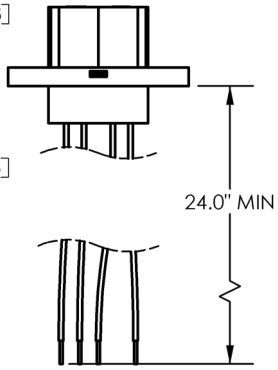
OPB755NZ



OPB755TZ



OPB755TAZ



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° C unless otherwise noted)	
Operating and Storage Temperature Range OPB750N, OPB750T OPB755NZ, OPB755TZ, OPB755TAZ	 -40° C to + 85° C -40° C to + 80° C
Lead Soldering Temperature[1]	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[3]	100 mW

Electrical Characteristics (T_A = 25° 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 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2 V
Output Phototransistor (see OP550 for additional information)						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	24	-	-	V	I_C = 100 µA
I_{CEO}	Collector Dark Current	-	-	100	nA	V_{CE} = 10 V, I_F = 0, H = 0
Coupled						
$V_{CE(SAT)}$	Saturation Voltage	-	-	.40	V	I_C = 150 µA, I_F = 30 mA, d = 0.22”
$I_{C(OFF)}$	Off-State Collector Current[5]	-	-	250	nA	I_F = 30 mA, V_{CE} = 5 V d = 0.08”, 0.15”, 0.22”
$I_{C(ON)}$	On-State Collector Current[4]	500 375 250	- - -	- - -	µA	I_F = 30 mA, V_{CE} = 5 V, d = 0.08” I_F = 30 mA, V_{CE} = 5 V, d = 0.15” I_F = 30 mA, V_{CE} = 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) $IC_{(OFF)}$ 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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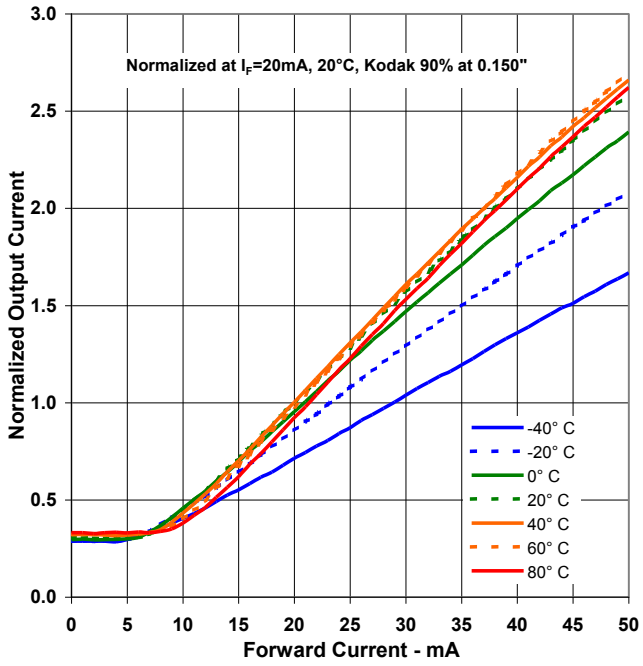
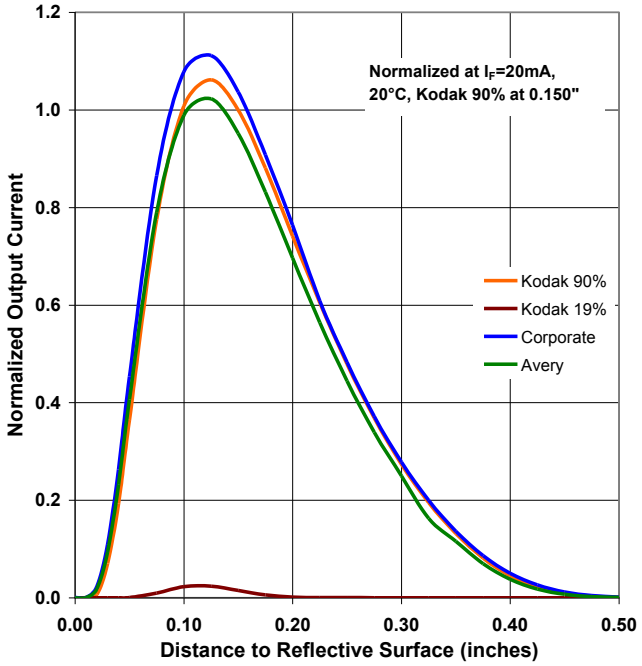
Performance

Output Current vs Forward Current vs Temp.



Collector Current vs. Object Distance



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