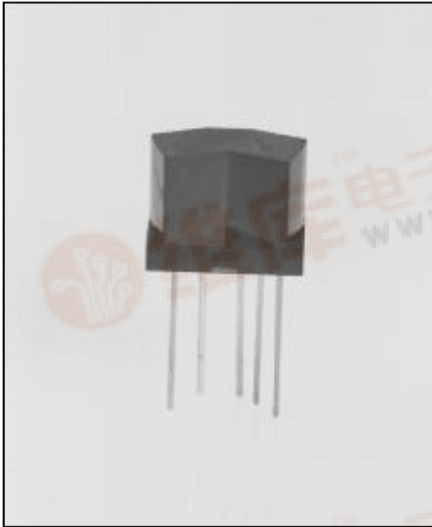




Product Bulletin OPB760N  
June 1996

# Photologic® Reflective Object Sensors

## Types OPB760N, OPB761N, OPB762N, OPB763N



### Features

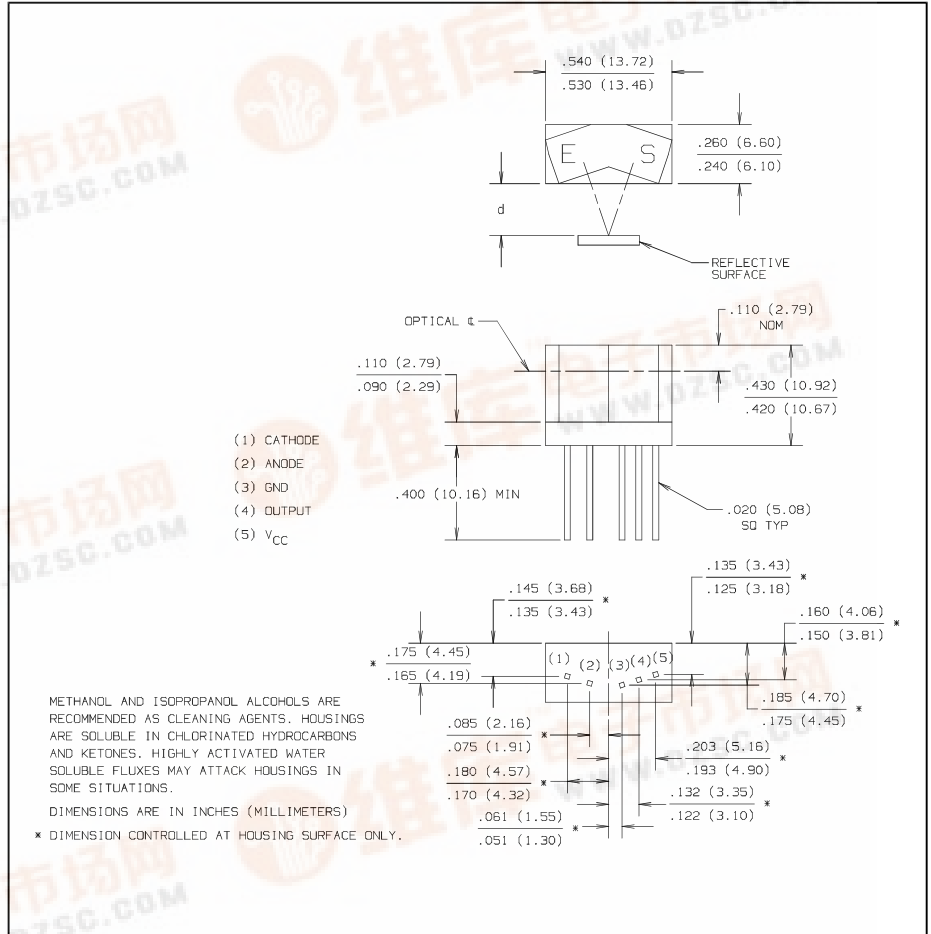
- Choice of mounting configurations
- Choice of output configurations

### Description

The OPB760N series of reflective assemblies feature Photologic® output. This electrical output can be specified as either TTL Totem Pole or TTL Open Collector. Either may be supplied with inverter or buffer output polarity. All have the added stability of a built-in hysteresis amplifier.

### Mounting Options

- OPB760N series PC board mount, without mounting tabs
- OPB760T series PC board mount, with two mounting tabs
- OPB770N series wire leads with connector, without mounting tabs
- OPB770T series wire leads with connector, with two mounting tabs



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

Supply Voltage, V <sub>CC</sub> (Not to exceed 3 sec.)	10 V
Storage Temperature Range	-40° C to +85° C
Operating Temperature Range	-40° C to +70° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240°C <sup>(1)</sup>
Input Diode Power Dissipation	100 mW <sup>(2)</sup>
Output Photologic® Power Dissipation	200 mW <sup>(3)</sup>
Total Device Power Dissipation	300 mW <sup>(4)</sup>
Voltage at Output Lead (Open Collector Output)	35 V
Diode Forward D.C. Current	40 mA
Diode Reverse D.C. Voltage	3 V

### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly 2.22 mW/° C above 25° C.
- (3) Derate linearly 4.44 mW/° C above 25° C.
- (4) Derate linearly 6.66 mW/° C above 25° C.
- (5) The OPB760N thru OPB763N series are terminated with .020" square leads designed for printed circuit board mounting.
- (6) Normal application would be with light source blocked, simulated by I<sub>F</sub> = 0mA.
- (7) Tested at d = 0.080" from a 90% diffuse white test surface.
- (8) Tested at d = 0.080", 0.150" and 0.220" from a 90% diffuse white test surface. Reference: Eastman Kodak, Catalog #1257795.
- (9) Tested at d = 0.080", 0.150" and 0.220" from a 5% diffuse black test surface.
- (10) All parameters tested using pulse technique.



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Electrical Characteristics ( $T_A = -40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  unless otherwise noted)

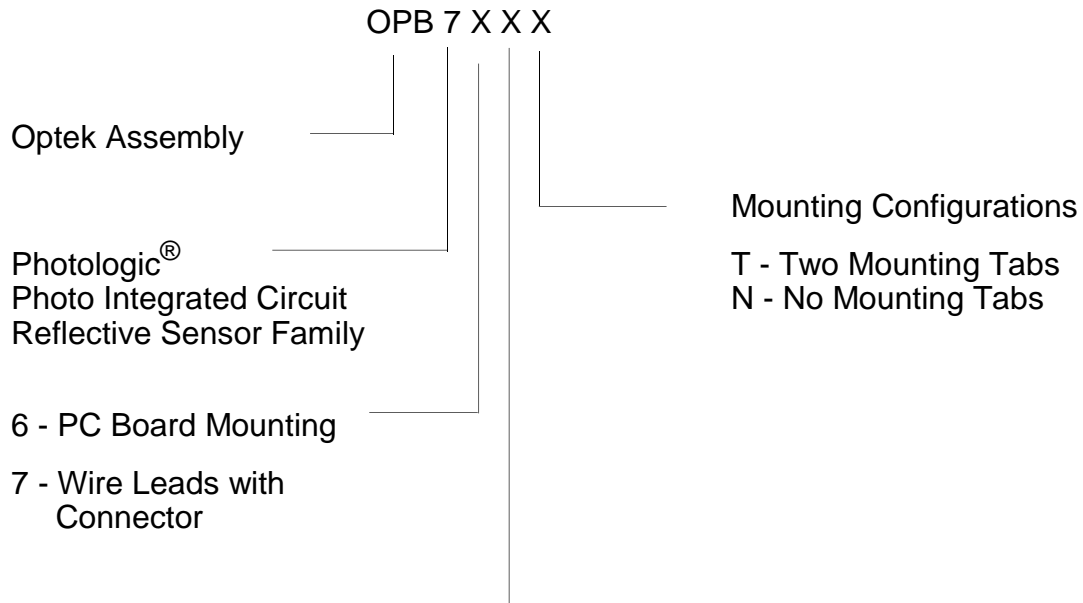
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>						
$V_F$	Forward Voltage			1.8	V	$I_F = 40\text{ mA}$ , $T_A = 25^{\circ}\text{C}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2\text{ V}$ , $T_A = 25^{\circ}\text{C}$
<b>Output Photologic<sup>®</sup> Sensor</b>						
$V_{CC}$	Operating D.C. Supply Voltage	4.75		5.25	V	
$I_{CCL}$	Low Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(6)(7)</sup> Output Open
	Inverted Totem-Pole Output Inverted Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(7)</sup> Output Open
$I_{CCH}$	High Level Supply Current: Buffered Totem-Pole Output Buffered Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(7)</sup> Output Open
	Inverted Totem-Pole Output Inverted Open-Collector Output			10	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(6)(7)</sup> Output Open
$I_{OH}$	High Level Output Voltage: Buffered Open-Collector Output			100	$\mu\text{A}$	$V_{CC} = 4.75\text{ V}$ , $V_{OH} = 30\text{ V}$ $I_F = 25\text{ mA}$ , $T_A = 25^{\circ}\text{C}$
	Inverted Open-Collector Output			100	$\mu\text{A}$	$V_{CC} = 4.75\text{ V}$ , $V_{OH} = 30\text{ V}$ , $I_F = 0\text{ mA}$ , $T_A = 25^{\circ}\text{C}$
$I_{F(+)}$	LED Positive-Going Threshold Current			25	mA	$V_{CC} = 5\text{ V}$ , $T_A = 25^{\circ}\text{C}$ <sup>(8)</sup>
$I_{F(+)} / I_{F(-)}$	Hysteresis					$V_{CC} = 5\text{ V}$ <sup>(8)</sup>
$I_{OS}$	Short Circuit Output Current: Buffered Totem-Pole Output	-15		-100	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 25\text{ mA}$ <sup>(7)</sup> Output = GND
	Inverted Totem-Pole Output	-15		-100	mA	$V_{CC} = 5.25\text{ V}$ , $I_F = 0\text{ mA}$ <sup>(7)</sup> Output = GND
$V_{OL}$	Low Level Output Voltage: Buffered Totem-Pole Output Buffered Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 0\text{ mA}$ <sup>(6)(7)</sup>
	Inverted Totem-Pole Output Inverted Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 25\text{ mA}$ <sup>(6)(7)</sup>
$V_{OL}$	Low Level Output Voltage: Buffered Totem-Pole Output Buffered Open-Collector Output			0.4	V	$V_{CC} = 4.75\text{ V}$ , $I_{OL} = 12.8\text{ mA}$ $I_F = 30\text{ mA}$ <sup>(9)</sup>
$V_{OH}$	High Level Output Voltage: Buffered Totem-Pole Output	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 25\text{ mA}$ <sup>(7)</sup>
	Inverted Totem-Pole Output	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 0\text{ mA}$ <sup>(6)(7)</sup>
$V_{OH}$	High Level Output Voltage: Inverted Totem-Pole Output Inverted Open-Collector	2.4			V	$V_{CC} = 4.75\text{ V}$ , $I_{OH} = -800\text{ }\mu\text{A}$ $I_F = 30\text{ mA}$ <sup>(9)</sup>

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# Types OPB760, OPB770 Series

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## PART NUMBER GUIDE



### Electrical Specification Variations

- 0 - Buffered Totem-Pole Output
- 1 - Buffered Open-Collector Output
- 2 - Inverted Totem-Pole Output
- 3 - Inverted Open-Collector Output