

Wide Gap Slotted Optical Switch

OPB800 (L and W Series)



Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

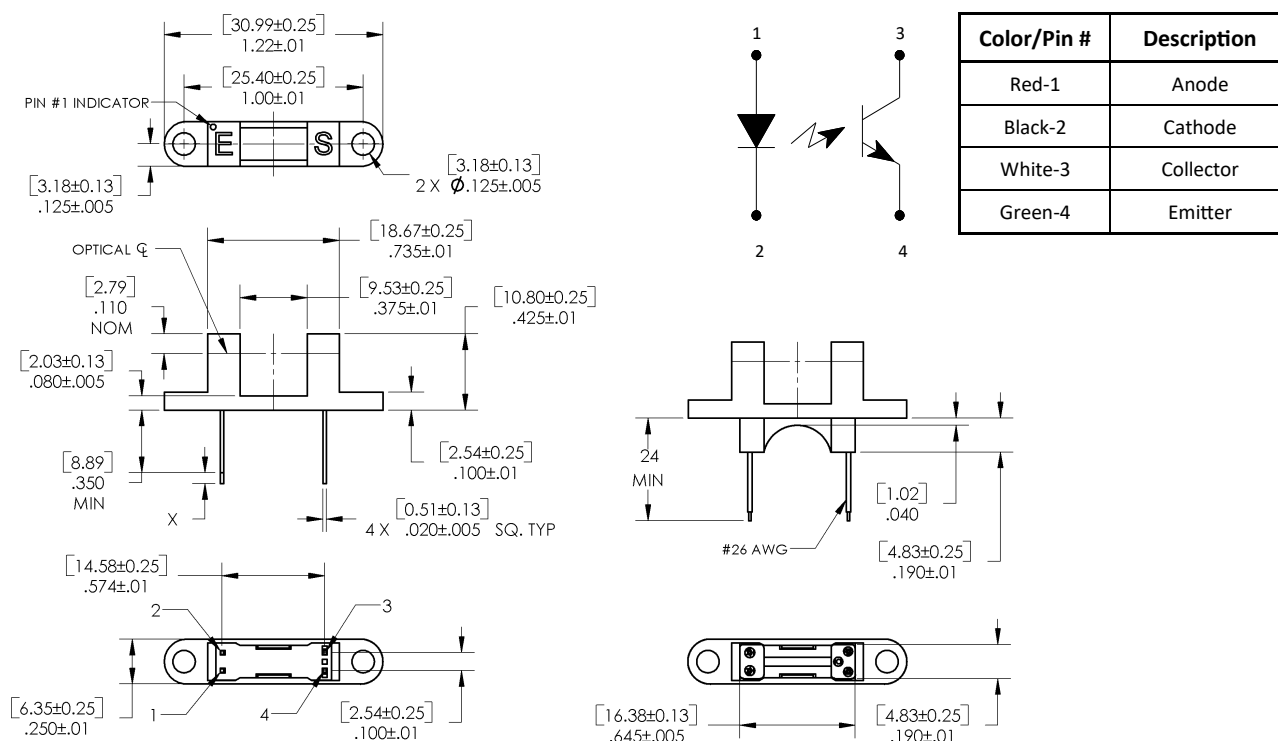
Storage and Operating Temperature L Series W Series	-40 °C to +85 °C -40 °C to +80 °C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 sec. with soldering iron] ⁽²⁾	260 °C

Input Diode

Forward DC Current	50 mA
Peak Forward Current (1 μs pulse width, 300 pps)	3 A
Reverse DC Voltage	2 V
Power Dissipation ⁽¹⁾	100 mW

Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
Power Dissipation ⁽¹⁾	100 mW



General Note

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Electrical Specifications

Electrical Characteristics ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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Input Diode

V_F	Forward Voltage	-	-	1.7	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2\text{ V}$

Output Phototransistor

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_C = 1\text{ mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_E = 100\text{ }\mu\text{A}$
I_{CEO}	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 10\text{ V}$

Combined

$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage					
	Parameter A (OPB800, OPB810)	-	-	0.4	V	$I_C = 250\text{ }\mu\text{A}$, $I_F = 20\text{ mA}$
	Parameter B (OPB801, OPB811)	-	-	0.4	V	$I_C = 500\text{ }\mu\text{A}$, $I_F = 10\text{ mA}$
	Parameter C (OPB802, OPB812)	-	-	0.6	V	$I_C = 1800\text{ }\mu\text{A}$, $I_F = 20\text{ mA}$
$I_{C(ON)}$	On-State Collector Current					
	Parameter A (OPB800, OPB810)	0.625	-	-	mA	$V_{CE} = 10\text{ V}$, $I_F = 20\text{ mA}$
	Parameter B (OPB801, OPB811)	1.25	-	-		$V_{CE} = 5\text{ V}$, $I_F = 10\text{ mA}$
	Parameter C (OPB802, OPB812)	2.25	-	-		$V_{CE} = 0.6\text{ V}$, $I_F = 20\text{ mA}$

Notes:

- (1) Derate linearly 1.67 mW/ $^{\circ}\text{C}$ above 25 $^{\circ}\text{C}$.
- (2) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (3) All parameters tested using pulse technique.
- (4) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (5) The W Series includes wire terminations of 24" (610 mm) 7-strand, 26 AWG UL insulated wire on each terminal. Each device incorporates a wire strain relief at the housing surface. The insulation functions and colors are: anode (red), cathode (black), phototransistor collector (white) and phototransistor emitter (green).

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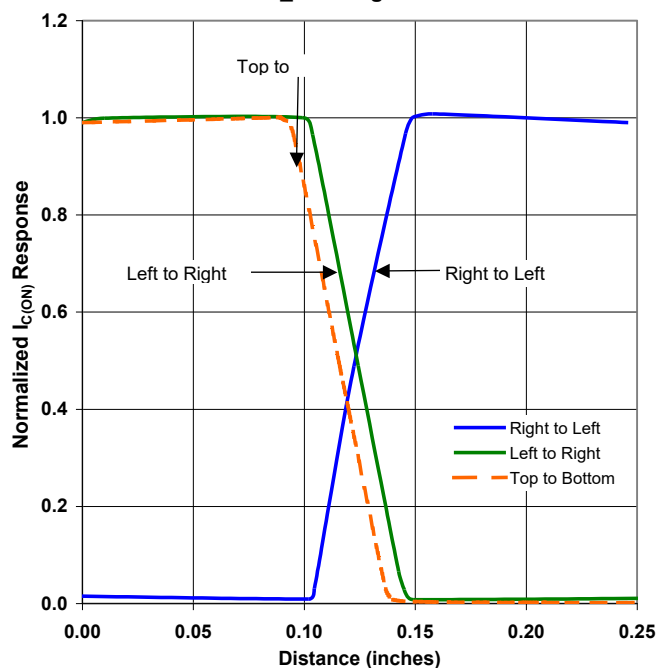
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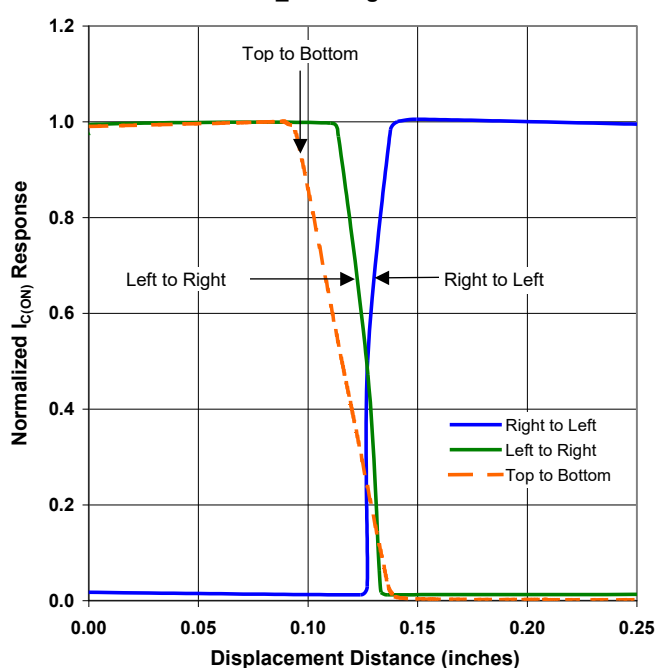


Performance

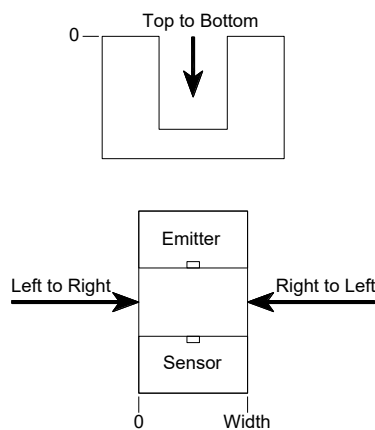
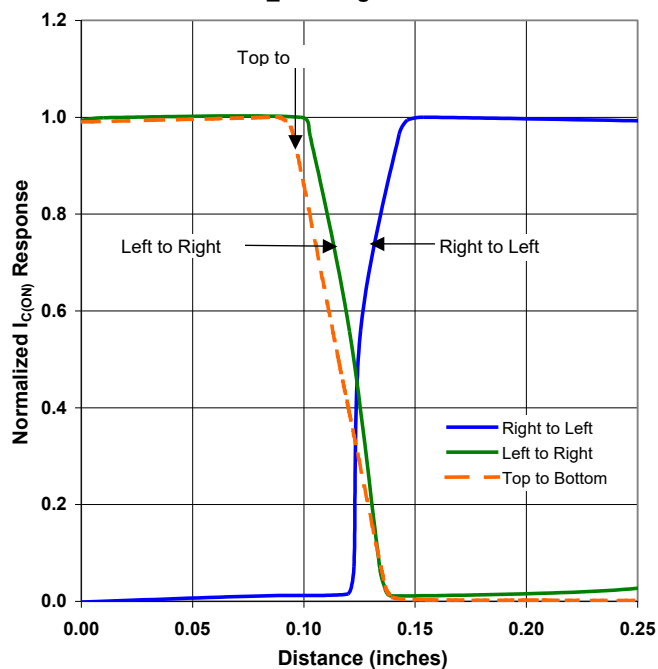
OPB800_51 - Flag Next to Emitter



OPB800_51 - Flag Next to Sensor



OPB800_51 - Flag in Middle of Slot



General Note

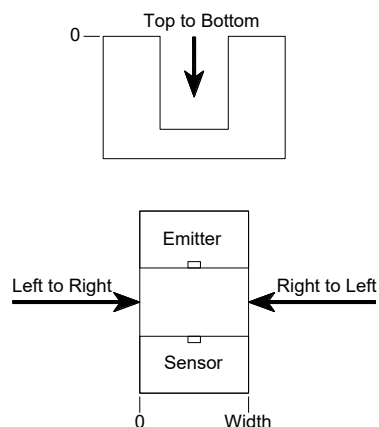
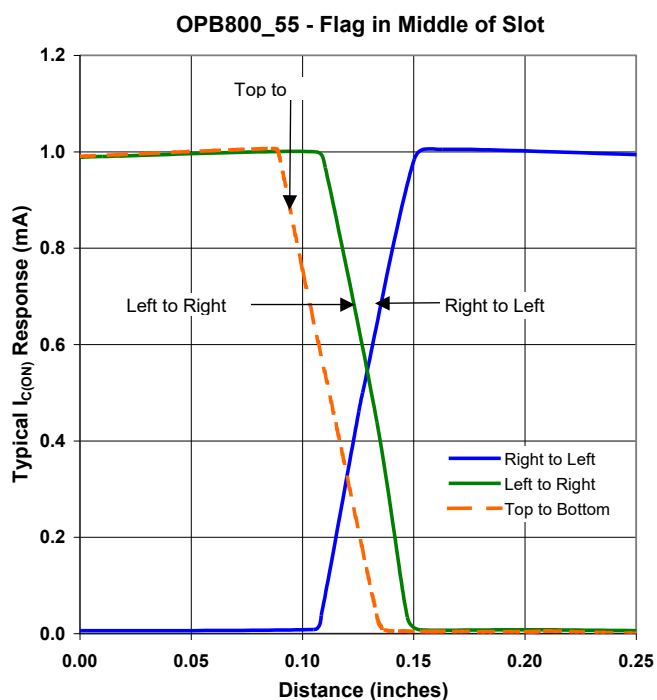
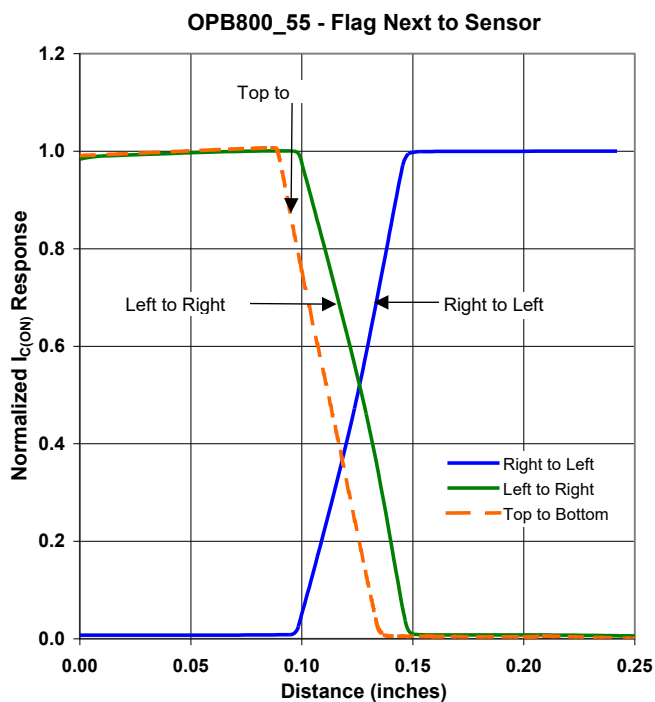
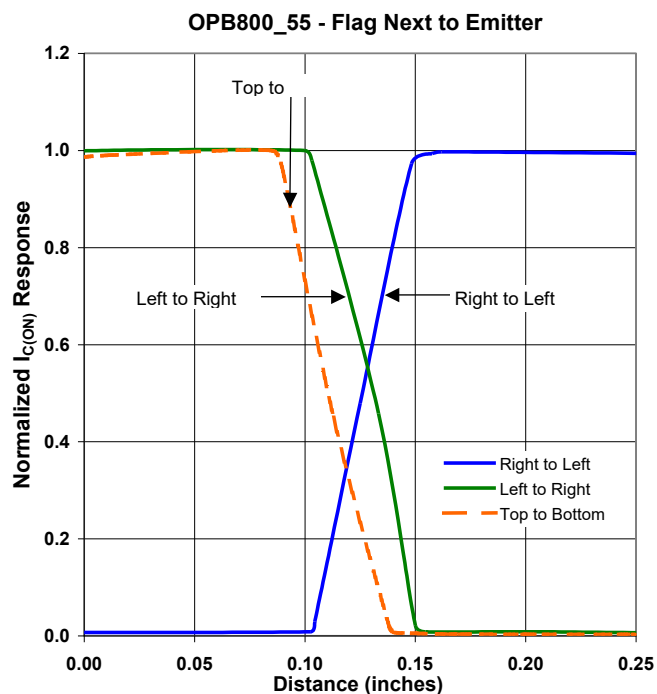
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