

Wide Gap Slotted Optical Switch

OPB800 (L and W Series)



Electrical Specifications

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

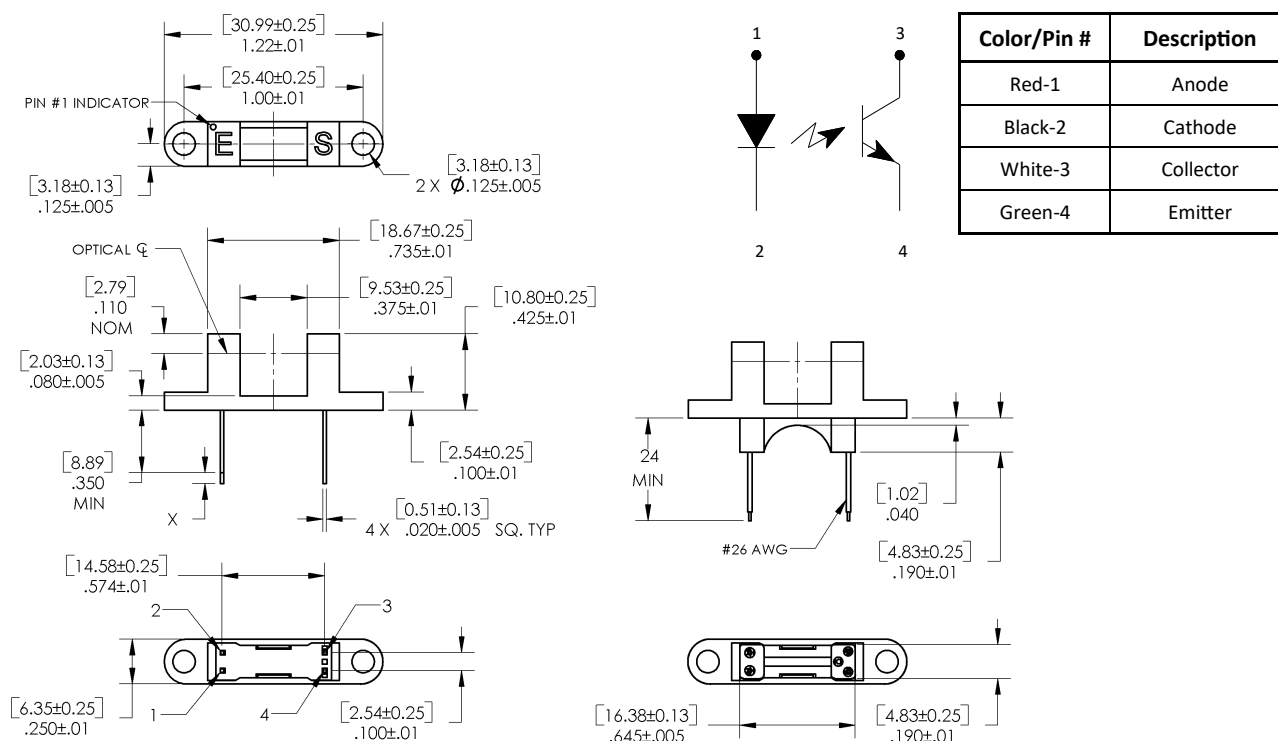
Storage and Operating Temperature L Series W Series	-40 °C to +85 °C -40 °C to +80 °C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 sec. with soldering iron] ⁽²⁾	260 °C

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

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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Electrical Specifications

Electrical Characteristics ($T_A = 25^\circ\text{C}$ 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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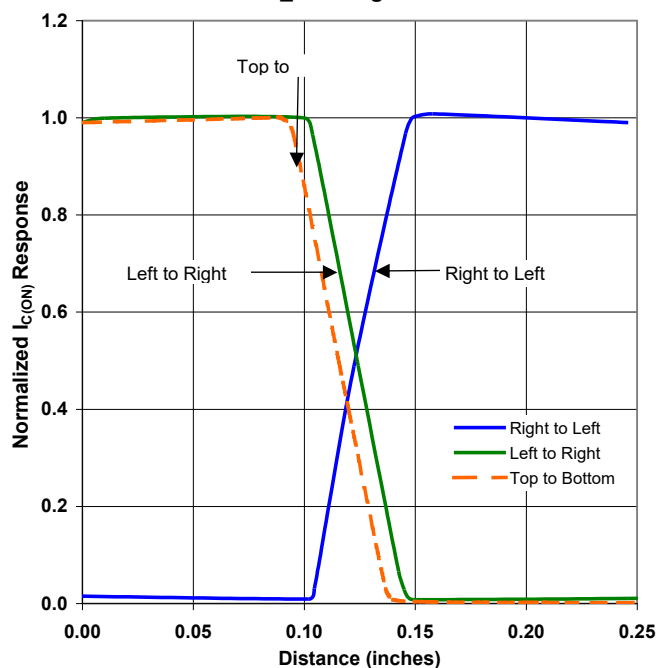
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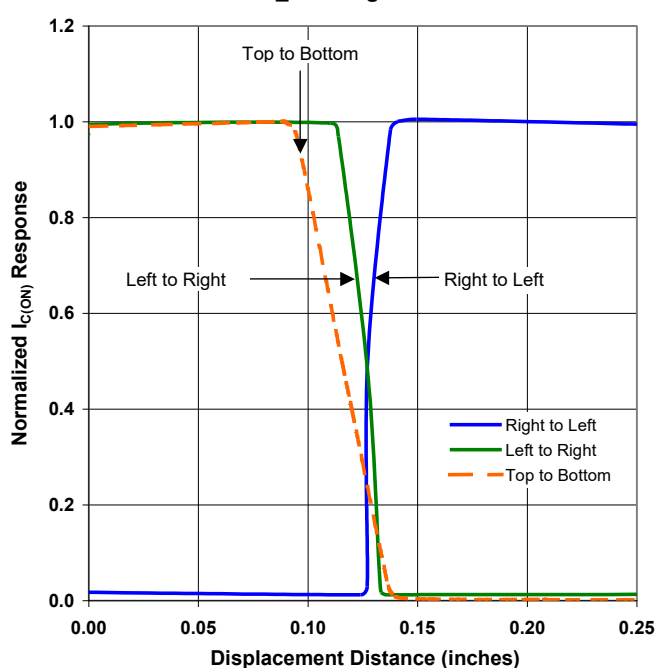


Performance

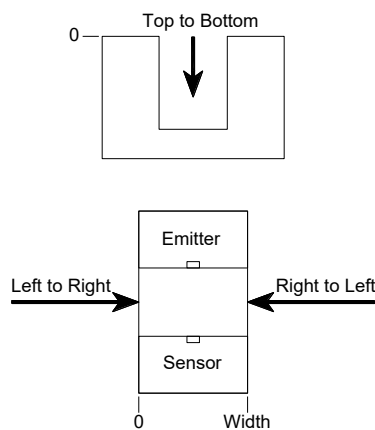
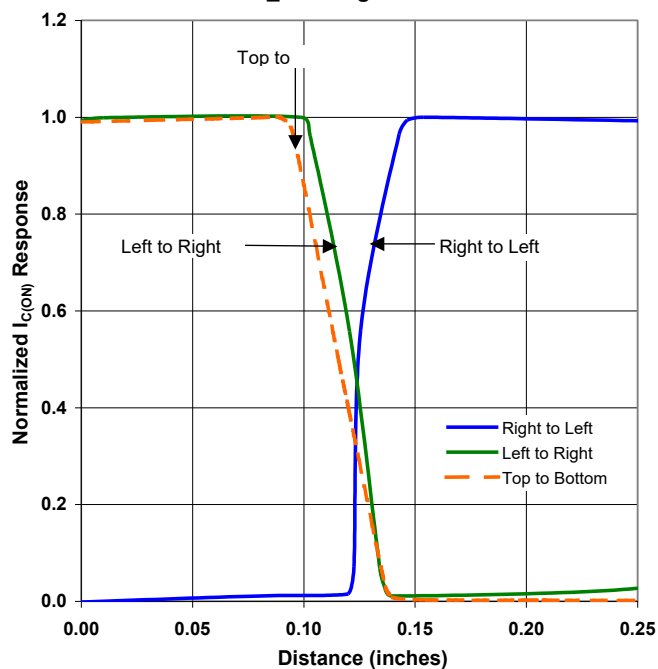
OPB800_51 - Flag Next to Emitter



OPB800_51 - Flag Next to Sensor



OPB800_51 - Flag in Middle of Slot



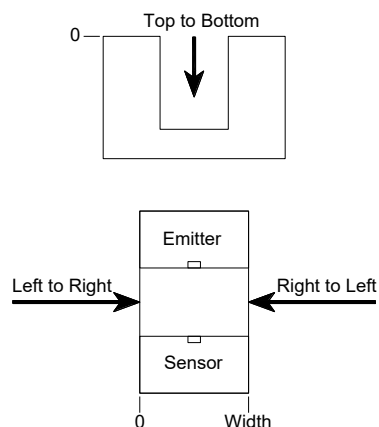
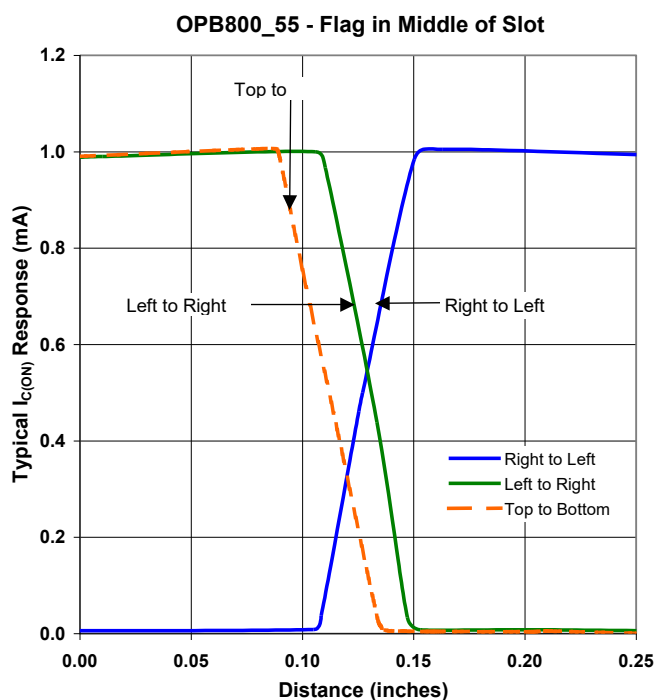
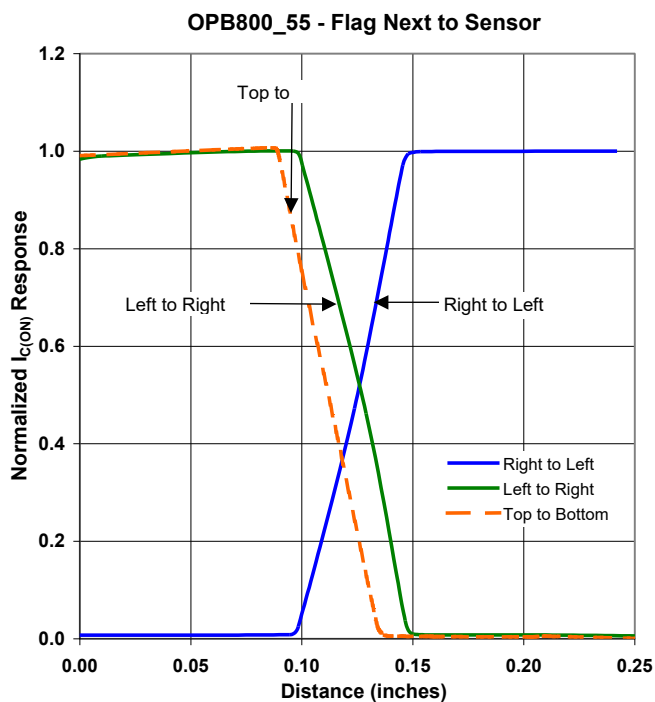
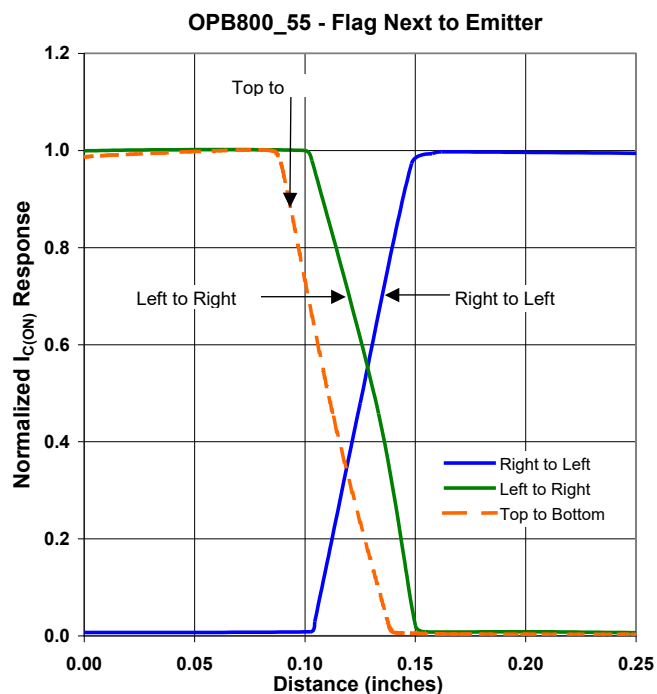
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Performance



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