

# Wide Gap Slotted Optical Switch

## OPB800 & OPB810 (L and W Series)



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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|-----------|-----|-----|-----|-------|-----------------|
|--------|-----------|-----|-----|-----|-------|-----------------|

#### Input Diode

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

#### 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:

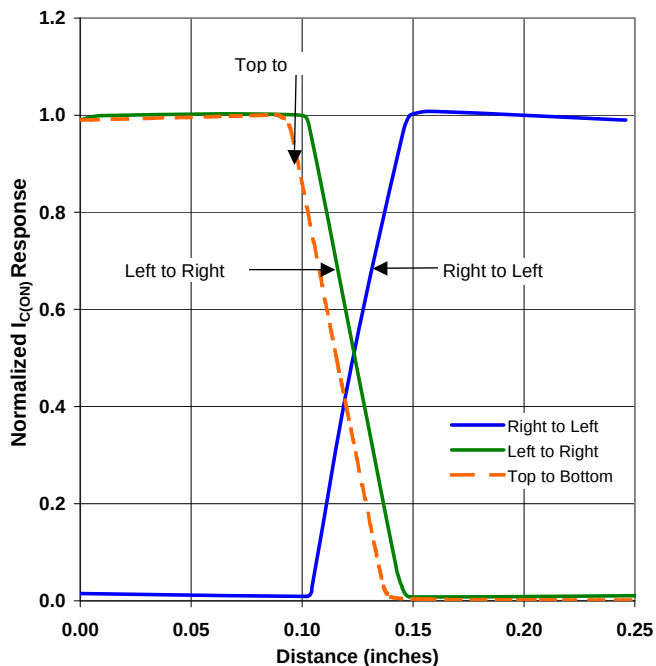
- (1) Derate linearly 1.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (2) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (3) All parameters tested using pulse technique.
- (4) Methanol or isopropanol are recommended as cleaning agents. Plastic 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).

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

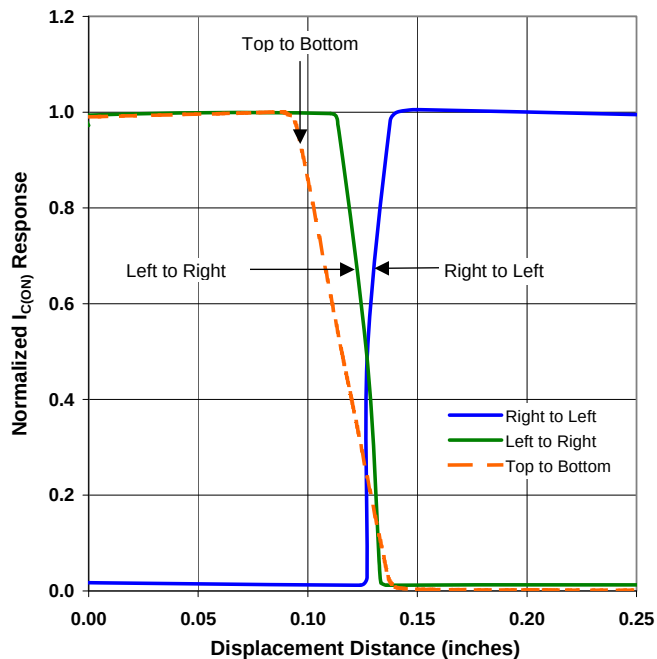
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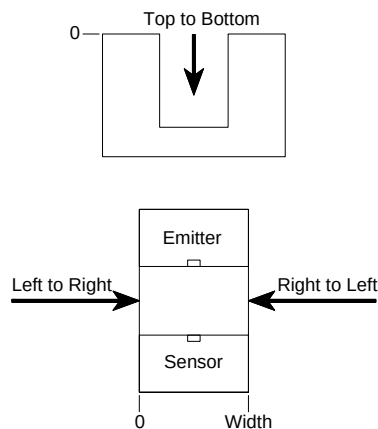
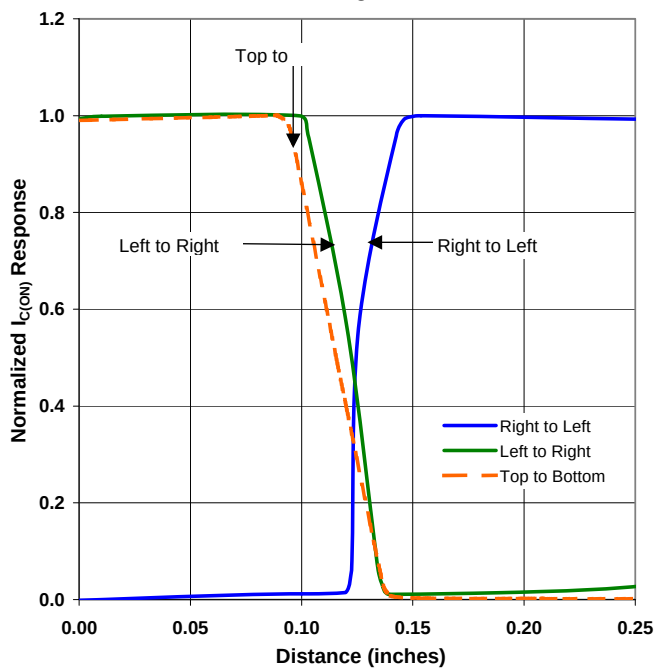
OPB800\_51 - Flag Next to Emitter



OPB800\_51 - Flag Next to Sensor



OPB800\_51 - Flag in Middle of Slot



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