

# Slotted Optical Switch

## OPB610, OPB611, OPB620, OPB621

### 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** (See OP240 for additional information)

$V_F$	Forward Voltage OPB610, OPB620 OPB621	-	-	1.6	V	$I_F = 10\text{ mA}$
		1.15	-	1.45	V	$I_F = 10\text{ mA}$
$I_R$	Reverse Current	-	-	100	$\mu\text{A}$	$V_R = 3\text{ V}$

**Output Phototransistor (OPB610, OPB620)** (See OP505 for additional information)

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	24	-	-	V	$I_C = 100\ \mu\text{A}$
$BV_{ECO}$	Emitter-Collector Breakdown Voltage	0.4	-	-	V	$I_{CE} = 100\ \mu\text{A}$
$I_{CEO}$	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 5\text{ V}$

**Output Photodiode (OPB611, OPB621)** (See OP999 for additional information)

$I_D$	Dark Current	-	-	65	nA	$V_R = 30\text{ V}, E_E = 0\text{ mW}$
$V_{(BR)R}$	Reverse Breakdown Voltage	60	-	-	V	$I_R = 100\ \mu\text{A}, E_E = 0\text{ mW}$
$V_F$	Forward Voltage	-	-	1.0	V	$I_F = 1\text{ mA}, E_E = 0\text{ mW}$

**Combined**

$V_{SAT}$	Collector-Emitter Saturation Voltage OPB610, OPB620	-	-	0.4	V	$I_F = 5\text{ mA}, I_C = 100\ \mu\text{A}$
$I_{C(ON)}$	On-State Collector/Diode Current OPB610, OPB620 OPB611, OPB621	1	-	-	mA	$I_F = 5\text{ mA}, V_{CE} = 5\text{ V}$ (gap unblocked)
		9	-	90	$\mu\text{A}$	$V_R = 5\text{ V}, I_F = 20\text{ mA}$ (gap unblocked)

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum of 20 grams force may be applied to leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$  above 25  $^\circ\text{C}$ .
- (3) Derate linearly 2.0 mW/ $^\circ\text{C}$  above 25  $^\circ\text{C}$ .
- (4) Plastic body is soluble in chlorinated hydrocarbons and ketones. It is recommended that a trial exposure to flux & cleaning chemicals is performed to ensure sensor is not damaged.

**General Note**

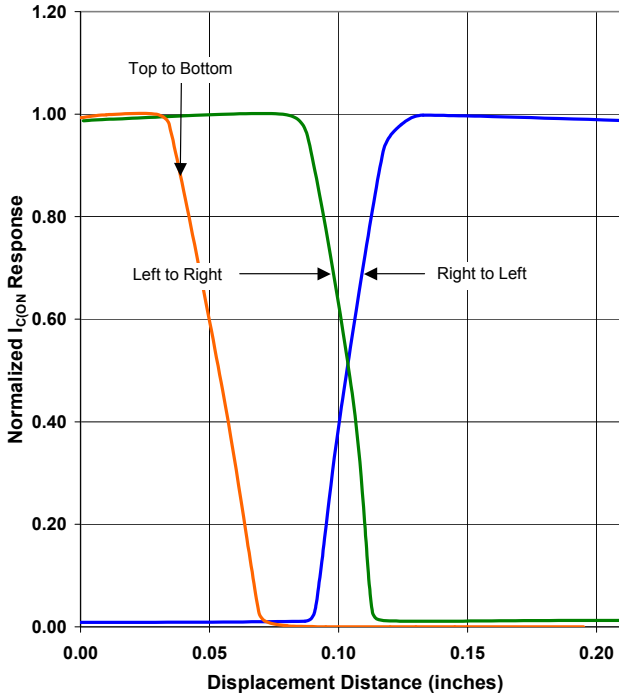
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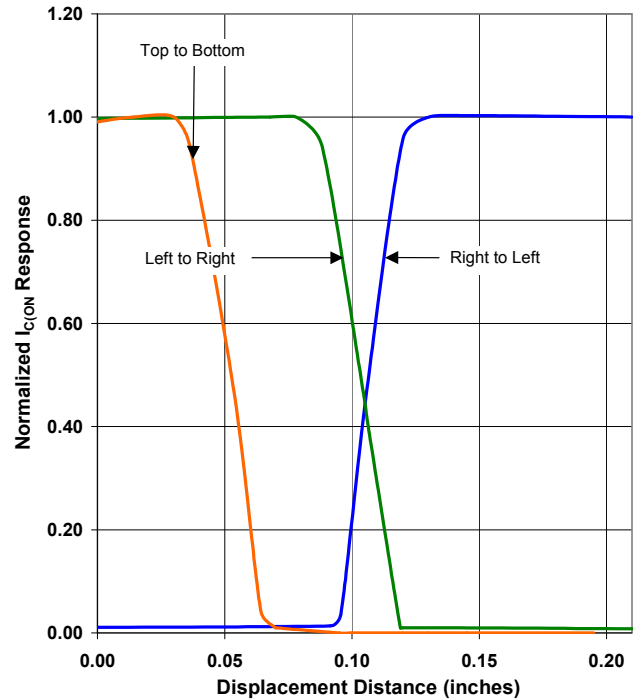
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## Performance

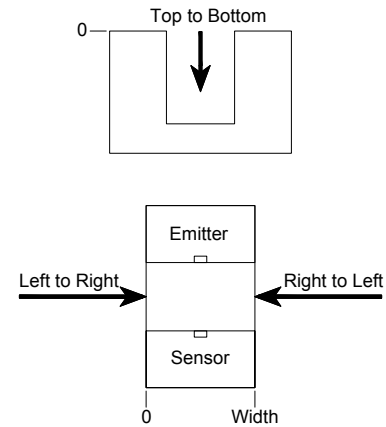
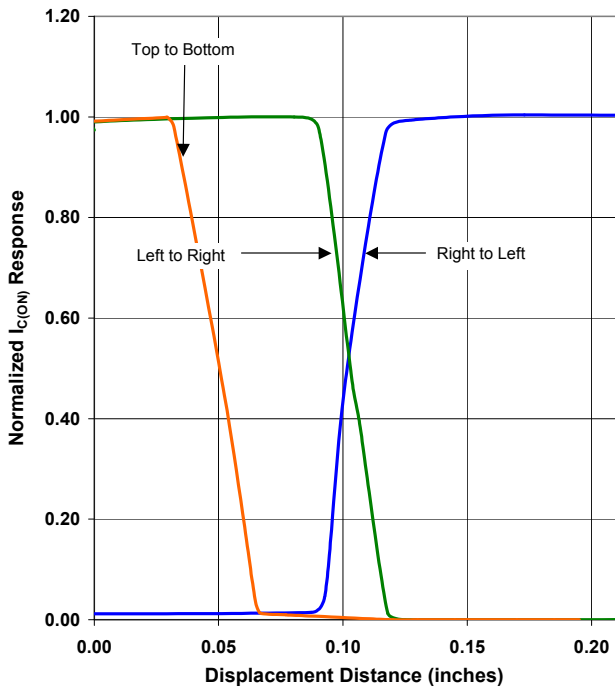
OPB610 - Flag Next to Emitter



OPB610 - Flag Next to Sensor



OPB610 - Flag in Middle of Slot



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