

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	μA	$V_R = 3\text{ V}$

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	μA	$V_R = 5\text{ V}, I_F = 20\text{ mA}$ (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

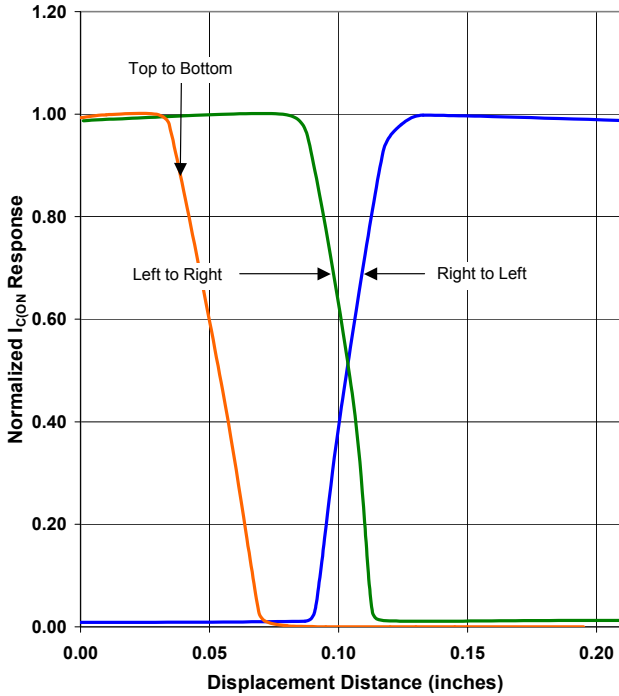
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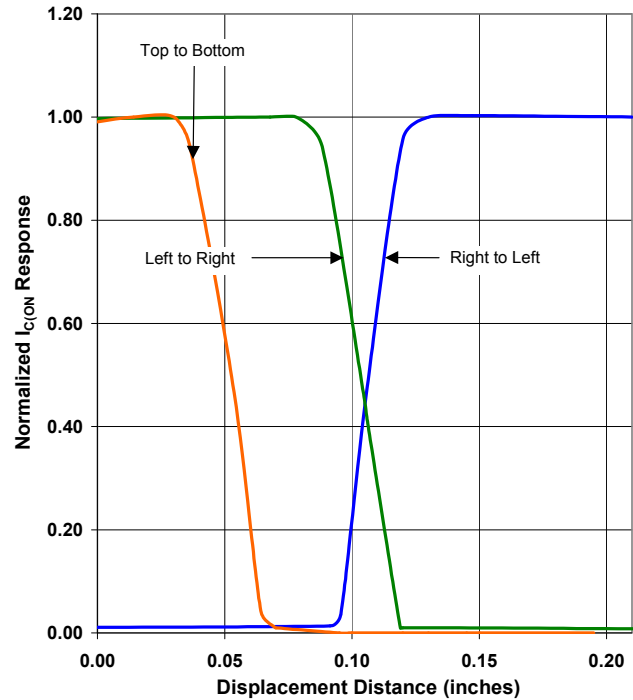
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Performance

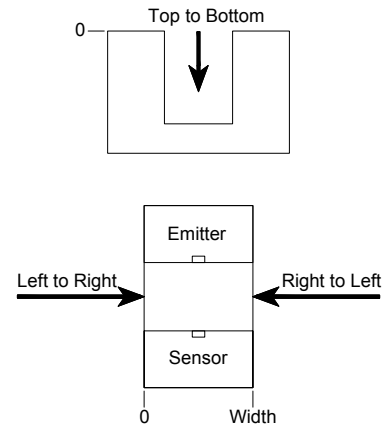
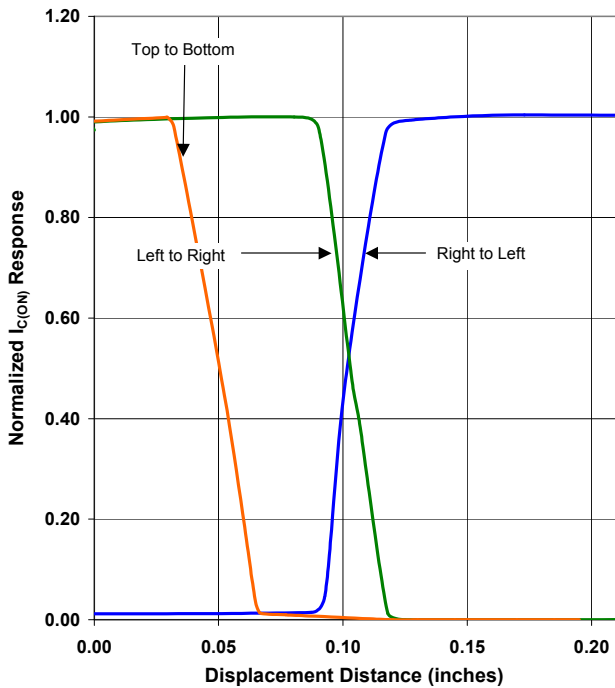
OPB610 - Flag Next to Emitter



OPB610 - Flag Next to Sensor



OPB610 - Flag in Middle of Slot



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