



# Slotted Optical Switch

OPB852A1-3, OPB853A1-3



## Electrical Specifications

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

Storage & Operating Temperature Range	-40°C to +85°C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron]	260°C <sup>(1)</sup>

### Input Diode

Forward DC Current	40 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	3 A
Reverse DC Voltage	2 V
Power Dissipation	100 mW <sup>(2)</sup>

### Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation	100 mW <sup>(2)</sup>

**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 OP140 for additional information—OPB852A\_, OP245 for additional information—OPB853A)

$V_F$	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** (see OP550 for additional information—OPB852A\_, OP565 for additional information—OPB853A)

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_C = 1\text{ mA}$
	OPB852A1, OPB852A2, OPB852A3 OPB853A1, OPB853A2, OPB853A3	15	-	-	V	$I_C = 1\text{ mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_E = 100\ \mu\text{A}$
$I_{CEO}$	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 10\text{ V}$

### Combined

$V_{CE(SAT)}$	Saturation Voltage	-	-	-	V	$I_C = 500\ \mu\text{A}, I_F = 20\text{ mA}$
	OPB852A1, OPB852A2	-	-	0.4	V	$I_C = 1.8\text{ mA}, I_F = 20\text{ mA}$
	OPB852A3 OPB853A1, OPB853A2, OPB853A3	-	-	1.0	V	$I_C = 1.8\text{ mA}, I_F = 10\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	-	-	-	mA	$V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$
	OPB852A1	1.0	-	-	mA	$V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$
	OPB852A2	2.0	-	-	mA	$V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$
	OPB852A3	4.0	-	-	mA	$V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$
	OPB853A1	2.5	-	-	mA	$V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$
	OPB853A2 OPB853A3	5.0 10.0	- -	- -	mA mA	$V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$ $V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$

Notes:

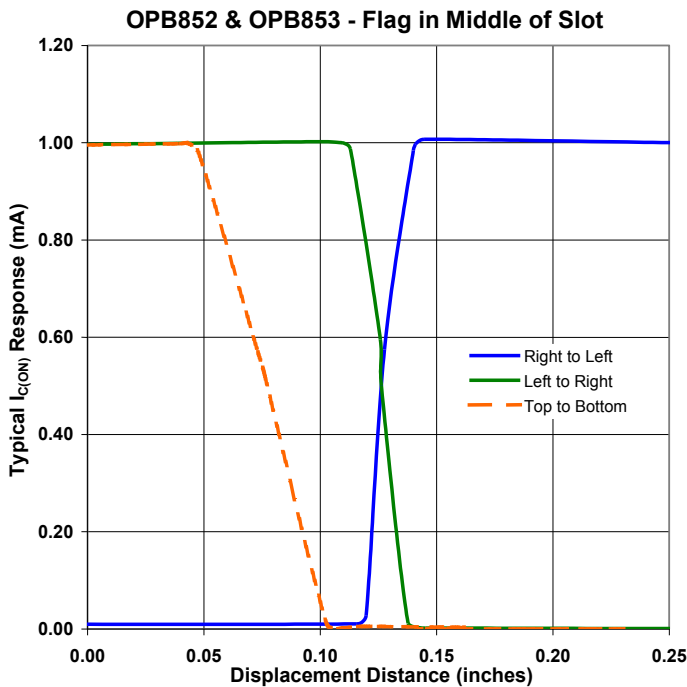
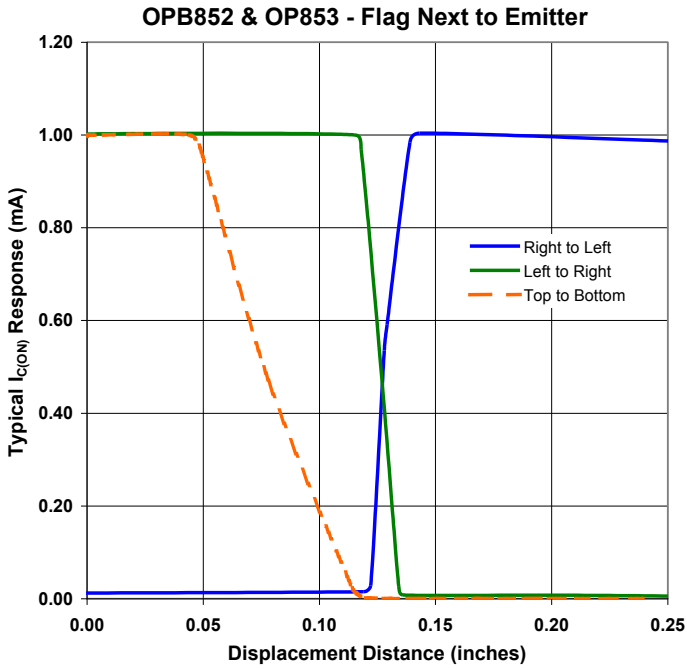
- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/ $^\circ\text{C}$  above 25°C.
- (3) Methanol and isopropanol are recommended as cleaning agents. Housings are soluble in chlorinated hydrocarbons and ketones. Highly activated, water soluble fluxes may attack housings in some situations.
- (4) All parameters tested using pulse technique.

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## Performance



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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