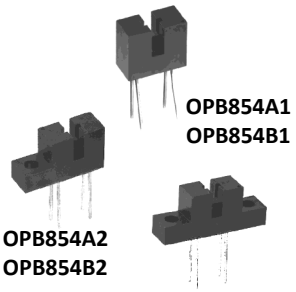
Slotted Optical Switch

OPB854A1, OPB854A2, OPB854A3, OPB854B1, OPB854B2, OPB854B3

Features:

- Opaque housing material for ambient light rejection
- Non-contact switching
- Printed circuit board mounting, lead spacing 0.300” (7.62 mm)
- Slot width 0.100” (2.54 mm)
- Choice of three mounting configurations



Description:

Each OPB854 series contains an Infrared Light Emitting Diode (LED) and an NPN silicon phototransistor mounted on opposite sides of a 0.100” (2.54 mm) wide slot in an opaque plastic housing. The OPB854 series has an equivalent aperture of 0.60” (1.52 mm) in diameter because of the lens on the emitting an sensing devices.

The difference between the OPB854A series and OPB854B series are electrical characteristics.

Switching of the phototransistor occurs whenever an opaque object passes through the slot.

Applications:

- Non-contact interruptive object sensing
- Assembly line automation
- Machine automation
- Equipment security
- Machine safety

Ordering Information					
Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture Emitter/Sensor	Lead Length / Spacing
OPB854A1	890 nm	Transistor	0.100" / 0.250”	None	0.400" / 0.300"
OPB854B1					
OPB854A2					
OPB854B2					
OPB854A3					
OPB854B3					

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.

© TT electronics plc

TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Electrical Specifications

Absolute Maximum Ratings (T_A=25°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][(1)]	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[(2)]	100 mW

Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
Power Dissipation[(2)]	100 mW

Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode (see OP140 for additional information)						
V_F	Forward Voltage	-	-	1.7	V	I_F = 20 mA
I_R	Reverse Current	-	-	10	µA	V_R = 2 V
Output Phototransistor (see OP550 for additional information)						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	I_C = 1 mA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	I_E = 100 µA
I_{CEO}	Collector Dark Current	-	-	100	nA	V_{CE} = 10 V, I_F = 0, E_E = 0
Combined						
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage OPB854A series OPB854B series	 - -	 - -	 0.6 0.4	V	 I_C = 2 mA, I_F = 16 mA I_C = 250 µA, I_F = 20 mA
$I_{C(ON)}$	On-State Collector Current OPB854A series OPB854B series	 3 1	 - -	 - -	mA	 V_{CE} = 1 V, I_F = 16 mA V_{CE} = 10 V, I_F = 20 mA

Notes:

(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly 1.67 mW/°C above 25 ° C.
(3) All parameters tested using pulse techniques.
(4) Lead spacing of 0.220" (5.59 mm) or 0.320" (8.13 mm) is available. Leads are 0.20" sq. (5.1 mm) and 0.425" (10.8 mm) long (minimum).
(5) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
(6) Polarity is denoted by color of housing top (gray or clear LED, black sensor).

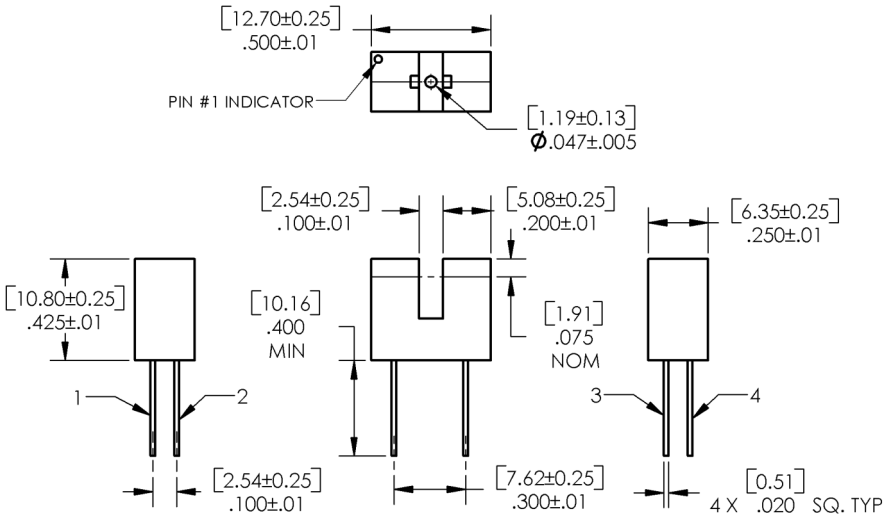
General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

© TT electronics plc

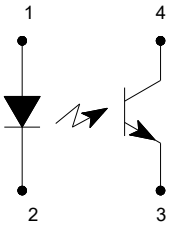
TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Slotted Optical Switch

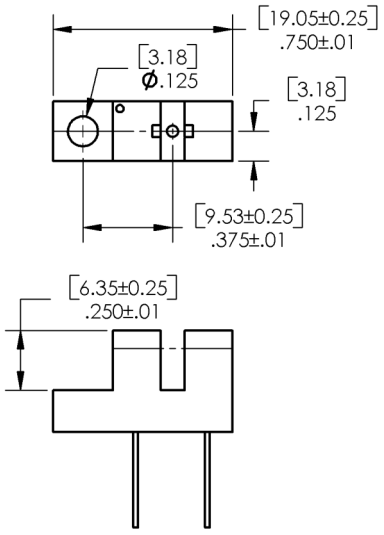
OPB854A1, OPB854A2, OPB854A3, OPB854B1, OPB854B2, OPB854B3



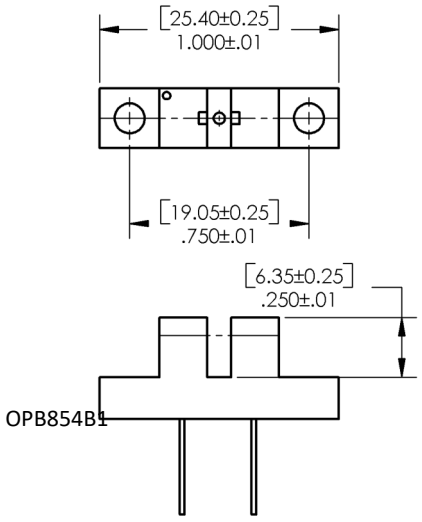
OPB854A1/OPB854B1 - Housing



Pin #	Description
1	Anode
2	Cathode
3	Emitter
4	Collector

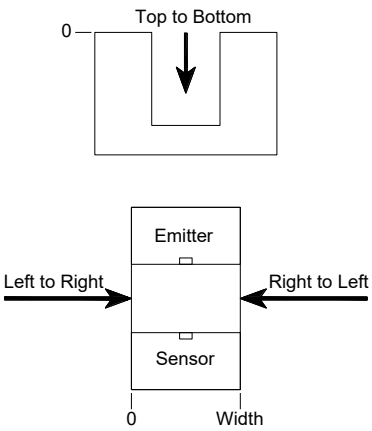


OPB854A2/OPB854B2 - Housing



OPB854A3/OPB854B3 - Housing

Flag Travel for Graphs on page 4



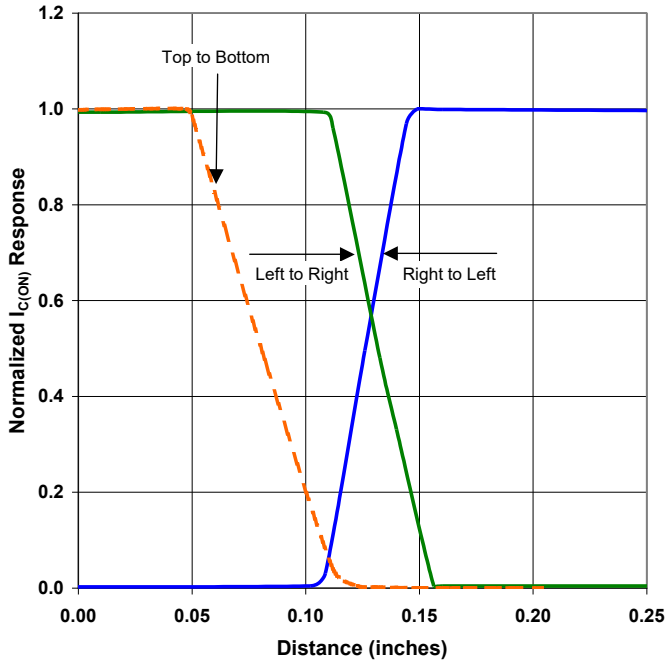
DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES

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.

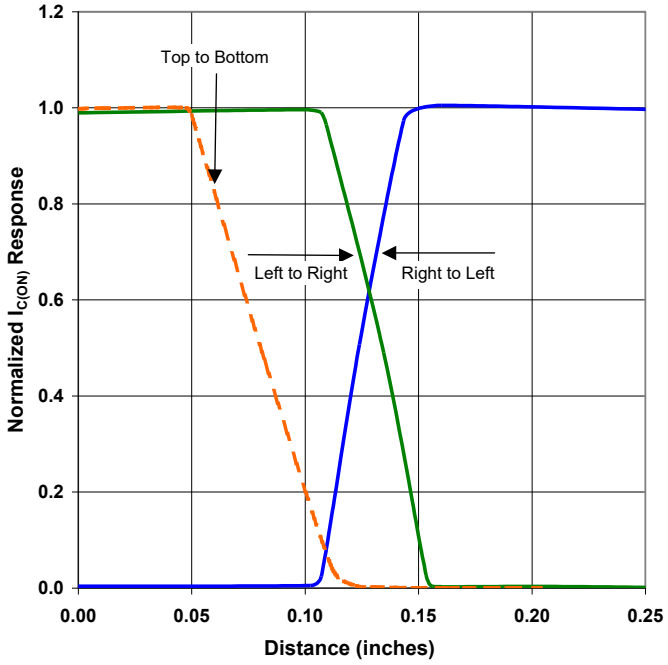
© TT electronics plc

TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

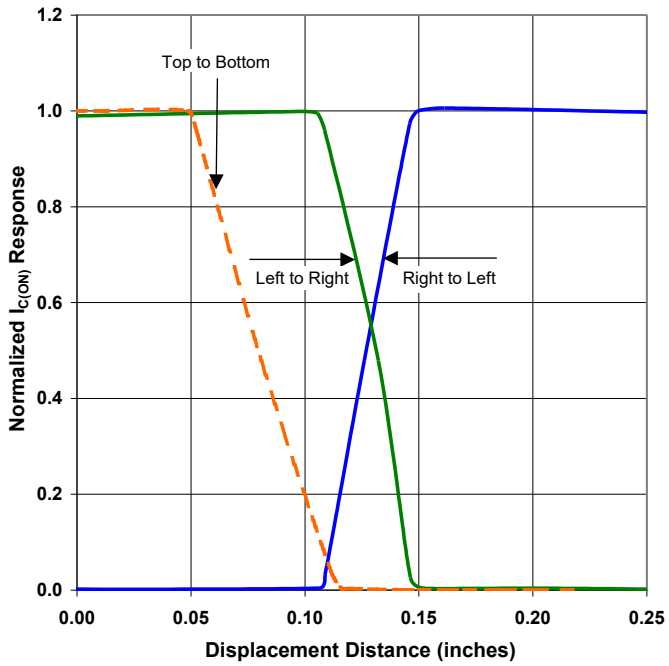
Flag Next to Emitter



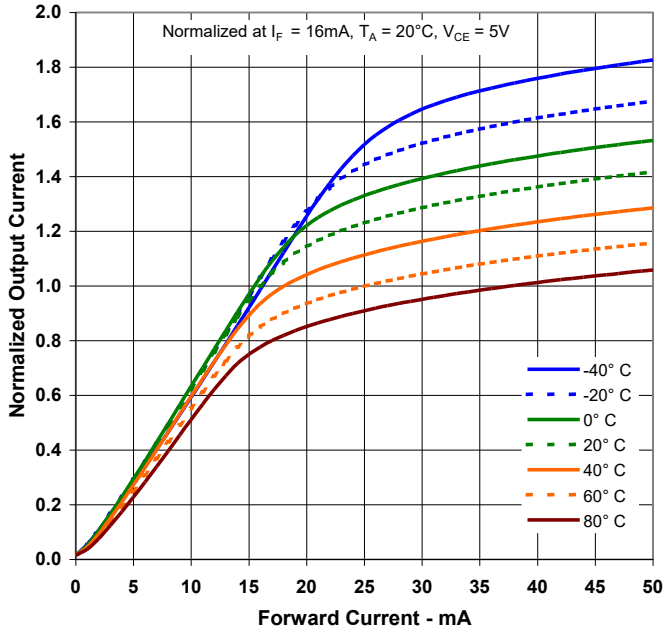
Flag Next to Sensor



Flag in Middle of Slot



Output Current vs Forward Current vs Temperature



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.

© TT electronics plc

TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

TT Electronics:

ASC1206-150KFT5 OPB829CZ P160KNP-0QC20A10K WA84-180RJI WP4S-1R5JA2 LR1206-R10FW MFR3-10RFC OARS-XP-0R001 WH10-100RJI OPB802W55Z PCF0603PR-1K-BT1 WDBR122RKT WH25-8R2JI CAW104R70JLF OVLBB4C7 PCF0402PR-180RBT1 RC55Y-210KBI WH5-50RJI WHS3-33RJA1 WCR1206-200KFI APC0805RD-10KBT5 MFC0805-R10FT5 PCF0603R-100KBT1 SQP7S-82RJB15 LRMAP3920C-R001FT BPR10101J OAR5 - R020FI W24-33KJI WCR0805-82KFI 67WR5KLFTB