Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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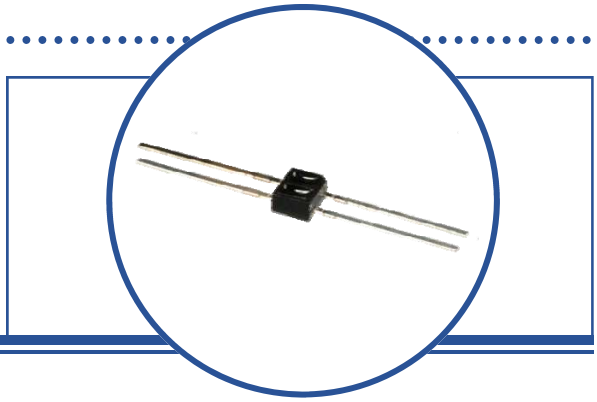
Reflective Object Sensor
OPB609 Series

TT electronics
OPTEK Technology

Features:

- OP609 emitter (940 nm IR-LED)
- Unfocused for sensing diffuse surface
- Low-cost plastic housing
- High-speed phototransistor output



Description:

The **OPB609** consists of an 940 nm, Light Emitting Diode (LED) and an NPN silicon Phototransistor, which are mounted “side-by-side” on parallel axes in a black opaque plastic housing. This unfocused reflective object sensor is ideal for detection of diffuse materials such as paper, labels, or anything with a matte finish.

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

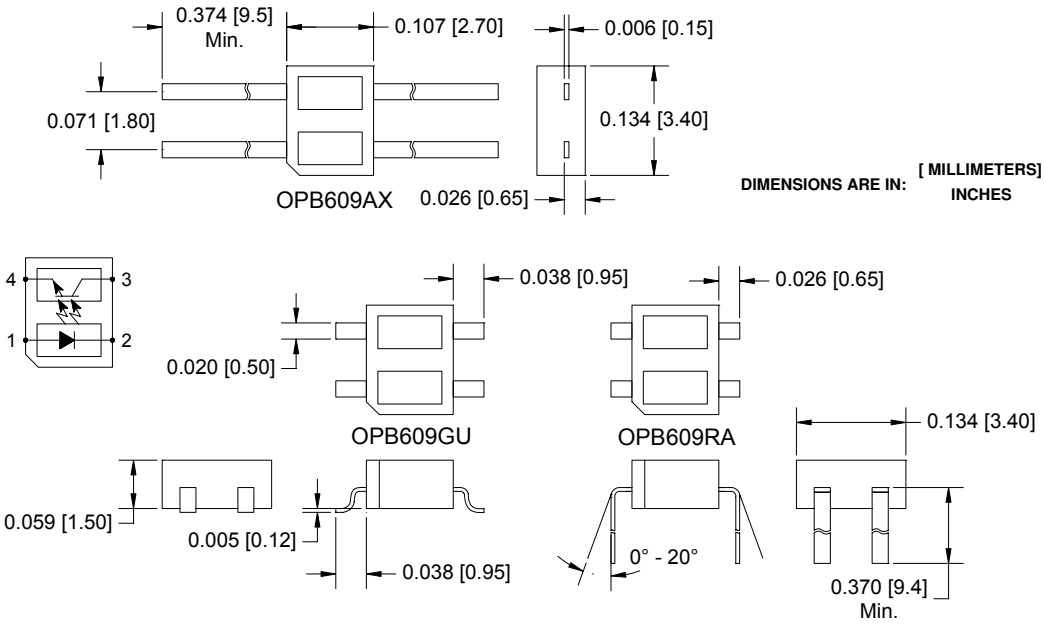
Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End-of-travel sensor
- Door sensor
- Edge detection
- Paper jam detection
- Mark detection

CONTAINS POLYSULFONE
To avoid stress cracking, we suggest using ND Industries’ **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK’s molded plastics.

Ordering Information	
Part Number	**Description**
OPB609AX	Reflective Object Sensor with IR LED
OPB609GU	
OPB609RA	

Pin #	Function
1	Anode
2	Cathode
3	Collector
4	Emitter



RoHS

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

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Storage and Operating Temperature Range	-25° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 seconds with soldering iron](1)	260° C(1)

Input LED

Forward DC Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	1 A
Reverse DC Voltage	5 V
Power Dissipation(2)	75 mW

Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	50 mA
Power Dissipation(3)	75 mW

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input IR LED (see OP168 for additional information)						
V_F	Forward Voltage	-	-	1.7	V	I_F = 20 mA
I_R	Reverse Current	-	-	10	µA	V_R = 5 V
θ	Beam Divergence	-	90	-	Degree	I_F = 20 mA
Output Phototransistor (see OP508 for additional information)						
$V_{(BR)CE0}$	Collector Emitter Breakdown Voltage	30	-	-	V	I_C = 100 µA
$V_{(BR)ECO}$	Emitter Collector Breakdown Voltage	5	-	-	v	I_E = 100 µA
I_{CEO}	Collector Dark Current	-	-	100	nA	V_{CE} = 10 V, I_F = 0
Coupled Characteristics						
$V_{CE(SAT)}$	Collector Emitter Saturation Voltage	-	-	0.4	V	E_E = 2.0 mW/cm^2, I_C = 2 mA
$I_{C(ON)}$	On-State Collector Current	0.1	-	-	mA	d = 0.5" (12.7 mm) I_F = 20 mA, V_{ce} = 5 V
$I_{C(OFF)}$	Off-State Collector Current	-	-	200	nA	V_{CE} = 5 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 1.25 mW/°C above 25°C.
3. Derate linearly 1.33mW/°C above 25°C.

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OP609 - Normalized Output vs Distance