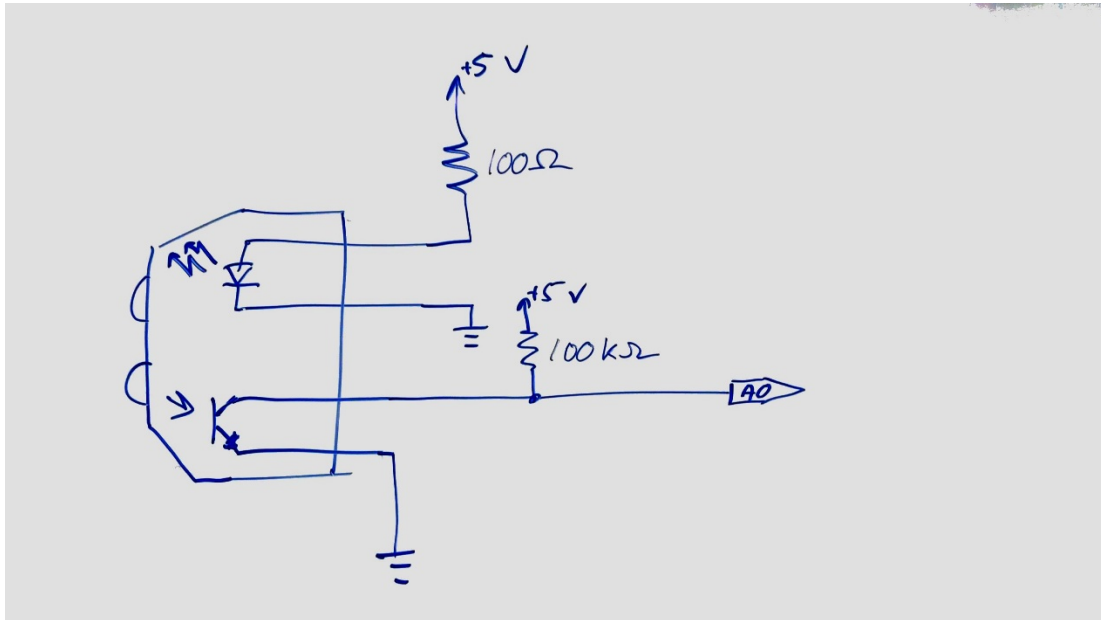


IR Proximity sensor



Kode

```
const int sensorPin = A5;

void setup()
{
  Serial.begin(9600); //Open a serial port
}

void loop()
{
  int sensorVal=analogRead(sensorPin);
  Serial.print("Sensor Value: ");
  Serial.print(sensorVal);
  float voltage = (sensorVal/1024.0) *5.0;
  Serial.print(", Volt: ");
  Serial.print(voltage);
  Serial.print("\r\n");
  delay(500);
}
```


Reflective Object Sensor

OPB703 through OPB705, OPB703WZ through OPB705WZ,
OPB70AWZ through OPB70HWZ



Features:

- Phototransistor output
- High sensitivity
- Low-cost plastic housing
- Available with lenses for dust protection and ambient light filtration
- Focused for maximum sensitivity



Description:

The OPB703, OPB704 and OPB705 consist of an Infrared (890nm) Light Emitting Diode (LED) and a NPN silicon Phototransistor, mounted side-by-side on converging optical axes in a black plastic housing and are designed for PCBoard mounting. The OPB703WZ, OPB704WZ, OPB705WZ and OPB70BWZ are designed for remote mounting utilizing interconnect wires of UL approved 26 AWG, 24" (61.0cm) minimum length, stripped and tinned.

The OPB70AWZ consists of an Infrared (890nm) Light Emitting Diode (LED) and a NPN silicon Photodarlington, mounted side-by-side on converging optical axes in a black plastic housing and is designed for remote mounting utilizing interconnect wires of UL approved 26 AWG, 24" (61.0cm) minimum length, stripped and tinned.

The OPB70CWZ through OPB70FWZ consist of a Visible (Red 640nm) Light Emitting Diode (LED) and a NPN silicon Phototransistor or Rbe Phototransistor, mounted side-by-side on converging optical axes in a black plastic housing and are designed for remote mounting utilizing interconnect wires of UL approved 26 AWG, 24" (61.0cm) minimum length, stripped and tinned.

Various lens options are available: No lens for the (OPB703, OPB703WZ), blue window for dust protection for the (OPB704, OPB704WZ, OPB70BWZ, OPB70HWZ) and aperture lens for improved resolution for the (OPB705, OPB705WZ, OPB70AWZ, OPB70CWZ, OPB70DWZ). The OPB704G and OPB704GWZ offers excellent protection for dirty environments.

The phototransistor responds to illumination from the emitter when a reflective object passes within the field of view centered typically at 0.15" (3.8 mm).

Custom electrical, wire, 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
- Mark Detection
- Office Equipment
- Gaming Equipment



RoHS

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

Ordering Information							
Part	LED Peak	Detector	Optical Cover	Lead or Wire			
OPB703	890 nm	Transistor	None	0.160" Leads			
OPB703WZ				24" / 26 AWG Wire			
OPB704			Blue Window	0.160" Leads			
OPB704WZ				24" / 26 AWG Wire			
OPB70HWZ				24" / 26 AWG Wire			
OPB704G				0.160" Leads			
OPB704GWZ			24" / 26 AWG Wire				
OPB705			640 nm	Darlington	Aperture	0.160" Leads	
OPB705WZ						24" / 26 AWG Wire	
OPB70AWZ				Rbe Transistor	Blue Window		
OPB70BWZ							Aperture
OPB70CWZ				Rbe Transistor	Clear Window		
OPB70DWZ							
OPB70EWZ				Rbe Transistor			
OPB70FWZ	Transistor						

Reflective Object Sensor OPB703 through OPB705, OPB703WZ through OPB705WZ, OPB70AWZ through OPB70HWZ



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

Storage Temperature Range	-40°C to +80° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 sec. with soldering iron]	240° C ⁽¹⁾

Input Diode

Forward DC Current	40 mA
Reverse DC Voltage	2 V
Power Dissipation	100 mW ⁽²⁾

Output Photodetector

Collector-Emitter Voltage Phototransistor Photodarlington	30 V 15 V
Emitter-Collector Voltage	5 V
Collector DC Current	25 mA
Power Dissipation	100 mW ⁽²⁾

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

(OPB703, OPB703WZ, OPB704, OPB704WZ, OPB705, OPB705WZ, OPB704G, OPB704GWZ, OPB70HWZ)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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Input Diode (See OP285 for additional information — for reference only)

V_F	Forward Voltage	-	-	1.7	V	$I_F = 40\text{mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2\text{V}$

Output Phototransistor (See OP505 for additional information — for reference only)

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_{CE} = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_{EC} = 100\ \mu\text{A}$
I_{CEO}	Collector Dark Current	-	-	250	nA	$V_{CE} = 10\text{V}, I_F = 0, E_E = 0$

Coupled

$I_{C(ON)}$	On-State Collector Current OPB70HWZ OPB703, OPB703WZ OPB704, OPB704WZ OPB705, OPB705WZ	0.60 0.30 0.20 0.15	- - - -	3.5 2.5 2.5 1.0	mA	$V_{CE} = 5\text{V}, I_F = 40\text{mA}, d = 0.15^\circ$ ⁽³⁾⁽⁷⁾
	OPB704G, OPB704GWZ	0.50	-	6.0		
I_{CX}	Crosstalk	-	-	20	μA	$V_{CE} = 5\text{V}, I_F = 40\text{mA}$ ⁽⁶⁾
	OPB703, OPB703WZ	-	-	20		
	OPB704, OPB704WZ, OPB70HWZ	-	-	20		
	OPB705, OPB705WZ	-	-	10		

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) For OPB703, OPB704 and OPB705, derate linearly 1.67 mW/° C above 25° C.
- (3) For OPB703WZ, OPB704WZ, OPB705WZ, OPB70BWZ, OPB704G, OPB704GWZ and OPB70HWZ derate linearly 1.82 mW/° C above 25° C.
- (4) The distance from the assembly face to the reflective surface is d.
- (5) Crosstalk (I_{CX}) is the collector current measured with the indicated current in the input diode and with no reflecting surface.
- (6) Measured using Eastman Kodak neutral white test card with 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog # E 152 7795.

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