

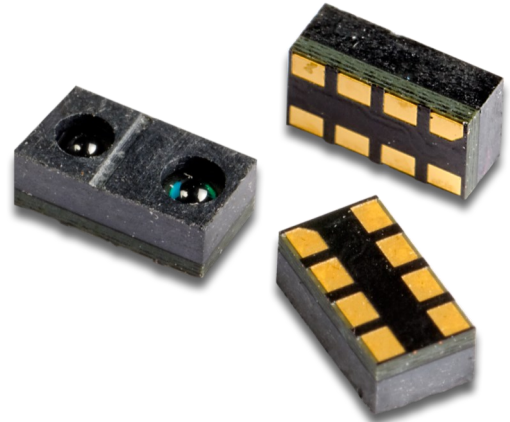
# SMD Reflective Optical Sensor

OPB9000



## Features

- Market leading 25k+ lux ambient light immunity
- Programmable output configuration and sensitivity level
- Single-command calibration with on-chip EEPROM
- Temperature-compensated LED drive
- 6 $\mu$ s response time
- Pulsed synchronous drive-detection
- Surface mount package
- Small dimensions: L 4.0mm x W 2.2mm x H 1.46mm
- -40°C to +85°C operating temperature range
- 2.7V to 5.5V supply voltage
- Ideal for industrial and medical applications



## Description

The OPB9000 is a versatile sensor that can be used in a wide variety of industrial and medical applications. The sensor features market-leading ambient light immunity which allows operation from dark rooms to bright sunlight. It can detect various types of media with as little as a 30% change in reflectivity. Robust, industrial grade resin allows the sensor to operate at a wide temperature range from -40C to + 85C, ideal for the harshest environments.

Factory calibrated to a white card at a 12mm distance to offer plug and play detection, the OPB9000 can be re-calibrated in a matter of milliseconds with a single command for specific application requirements. Integrated automatic temperature compensation maximizes detection consistency and reliability. The small footprint saves valuable PCB real estate as devices become smaller and more portable.

The OPB9000 eliminates the need for peripheral circuitry like op-amps, data converters, and comparators, as all analog signal conditioning is integrated in the IC.

## Applications

- All non-contact position sensing and presence detecting applications
- Industrial printing and high-speed paper detection
- Manufacturing and automation
- Automated banking machines
- Hospital and lab equipment
- Portable medical equipment
- Automatic dispensing
- Material handling and asset tracking



**Pb-Free**  
(RoHS)



**ESD**  
(Human Body Model)



**MOISTURE**  
(Level-4)

## Ordering Information

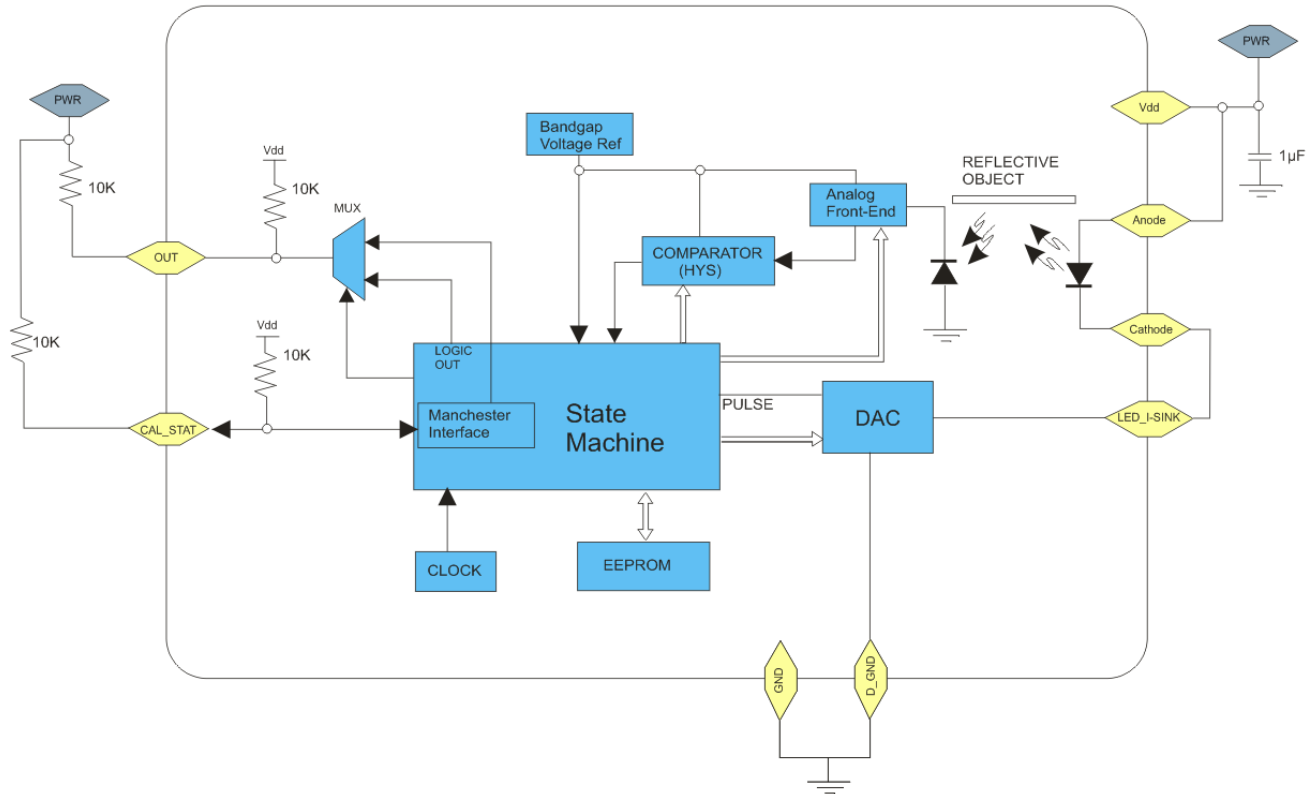
Part Number	Packaging	Quantity
OPB9000	Tape and reel	2500 per reel

### 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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### Recommended Application Circuit



Pin	Name	Function/Description
1	V <sub>DD</sub>	Positive supply power input
2	D_GND	Digital ground—connect to ground
3	GND	Ground—connect to D_GND
4	ANODE	LED anode—connect to VDD
5	CATHODE	LED cathode (connect to LED I-SINK pin)
6	LED I-SINK	LED current sink (connect to LED cathode)
7	CAL_STAT	Calibrate input / status output (to verify successful calibration)
8	OUT	Logic output, also used as digital output to read register bits

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