

## Product Brief

PB000130

# TMF8801

## Time-of-Flight Sensor

---

### 1 General Description

---

The TMF8801 is a time-of-flight (TOF) sensor in a single modular package with associated VCSEL. The TOF device is based on SPAD, TDC and histogram technology. The device achieves 2500 mm detection range.

---

### 2 Key Features

---

**Figure 1:**  
Added Value of Using TMF8801

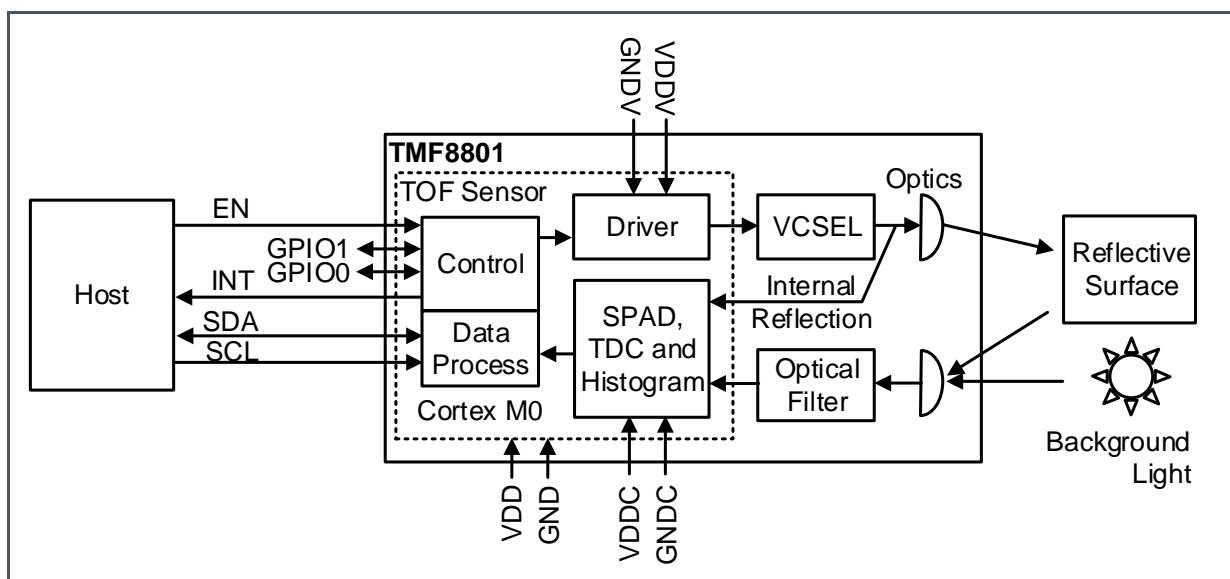
Benefits	Features
Small footprint fits in the mobile phone bezel	Modular package - 2.2 mm x 3.6 mm x 1.0 mm
Detecting central closest objects	21° FOI
Within 5 % of measurement (accuracy); no multipath and no multiple object problems as for iToF	Time-to-Digital Converter (TDC) Direct Time-of-Flight Measurement
Better accuracy detects reliably closest object Minimum distance 20 mm Maximum distance 2500 mm	Single Photon Avalanche Photodiode (SPAD) Histogram based architecture
No complex calibration	Dynamic cover glass calibration
Compensates for dirt on glass	Reliable Operation under demanding use cases
Class 1 Eye Safe	Fast VCSEL driver with protection

## 3 Applications

- Distance measurement for camera autofocus (Laser Detect Autofocus - LDAF)
- Presence detection - Object detection
- Supporting low-power system operation by enabling high-power components (i.e. 3D camera) only when an object is in the detection range
- Collision avoidance

## 4 Block Diagram

Figure 2:  
Functional Blocks of TMF8801



**Headquarters**  
ams AG  
Tobelbader Strasse 30  
8141 Premstaetten  
Austria, Europe  
Tel: +43 (0) 3136 500 0

Please visit our website at [www.ams.com](http://www.ams.com)  
Buy our products or get free samples online at [www.ams.com/Products](http://www.ams.com/Products)  
Technical Support is available at [www.ams.com/Technical-Support](http://www.ams.com/Technical-Support)  
Provide feedback about this document at [www.ams.com/Document-Feedback](http://www.ams.com/Document-Feedback)  
For sales offices, distributors and representatives go to [www.ams.com/Contact](http://www.ams.com/Contact)  
For further information and requests, e-mail us at [ams\\_sales@ams.com](mailto:ams_sales@ams.com)

Copyright ams AG. Trademarks Registered. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ams:

[TMF8801-1BM](#) [TMF8801-1B](#)