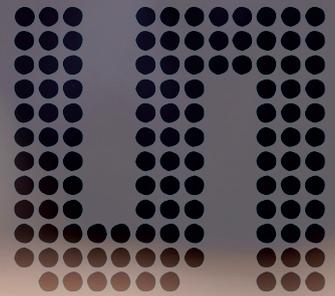


Extended Range ToF Sensor

ams.com/TMF8805



TMF8805 – Extended range 1DToF sensor

- Accurate measurement between 2 – 250 cm
- Integrated 940 nm eye safe VCSEL, SPAD Array, TDC and histogram algorithm
- Industry's smallest complete 1DToF solution measuring 3.6 x 2.2 x 1.0 mm

**Sensing
is life.**

General Description

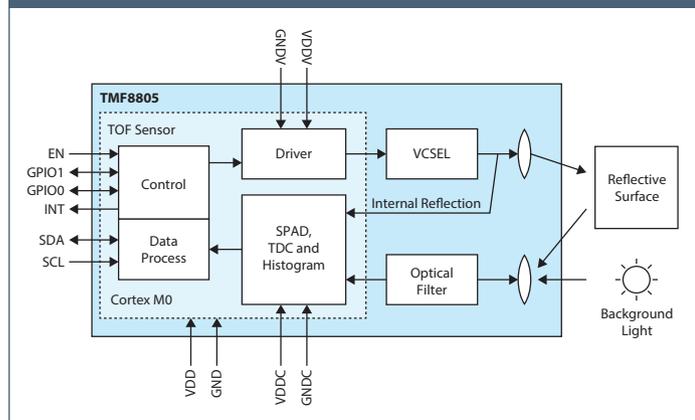
The TMF8805 is a true direct time-of-flight sensor and processing system in a highly integrated modular package measuring just 3.6 x 2.2 x 1.0mm. It integrates a 940nm Class 1 eye-safe VCSEL, a high-sensitivity SPAD array, precision time-to-digital converter and a low-power microcontroller sub-system. The embedded histogram algorithm can detect cover glass and objects behind glass, selecting the object with

highest SNR while compensating for dirt and smudges on cover glass. Together these components form a high-accuracy time-of-flight measurement system capable of detecting an object regardless of its color, texture or reflectivity in the range of 2 to 250cm. This device is ideally suited to world-facing camera LDAF applications, user presence detection, collision avoidance, object detection and other applications.

Applications

- Laser Detect Auto Focus (LDAF)
- Distance measurement
- Presence detection
- Object detection
- Collision avoidance

Block Diagram



Features

- True direct Time-of-Flight measurement
- 2 - 250 cm distance measurement
- Single Photon Avalanche Diode (SPAD) detection
- Fast compact Time-To digital (TDC) Converters
- Sub-nanosecond (<500 psec) light pulse driver
- High-accuracy distance measurement (5%)
- Histogram-based architecture
- SoC with integrated microcontroller
- Dynamic cover glass calibration
- Dirt/Smudge cover glass detection and compensation
- 940nm VCSEL driver
- Class 1 Eye Safe
- 27mA current consumption at 30Hz
- I²C fast-mode compatible interface
- Modular OLGA package with lens – 3.6 x 2.2 x 1.0 mm

Device	Package	I ² C Interface		Ordering Number
		Address	Bus Voltage	
TMF8805	OLGA	0X41	1.8V	TMF8805-1B

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