

IR Proximity Detection

ams.com/TMD2635



TMD2635 – IR Proximity Detection Sensor Family

- Small digital proximity system module with integrated sensor and VCSEL emitter
- Delivers low-power consumption with polling-mode operation with micro-controller
- Improved system proximity object detection through crosstalk offset registers
- Enables Industrial Design flexibility through split near/far photodiodes placement

**Sensing
is life.**

General Description

The TMD2635 features advanced proximity measurement in an ultra-small optical land grid array module that incorporates a 940nm IR VCSEL and is factory calibrated for IR proximity response. The proximity detection feature provides object detection (e.g. close proximity) by photodiode detection of reflected IR energy sourced by the integrated 940nm VCSEL emitter. Detect/release events can be interrupt driven, and occur when proximity result crosses upper and/or lower threshold settings. The proximity engine

features a wide range offset adjustment to compensate for unwanted IR energy reflection at the sensor. Proximity results are further improved by automatic ambient light subtraction. Separated near and far IR proximity photodiodes provides offset emitter/detector placement for both 1.5mm circular and 1x2mm oval apertures. An integrating data converter which converts photodiode current into a digital signal output with a 1.8V I²C interface which can be interfaced with a microprocessor.

Features

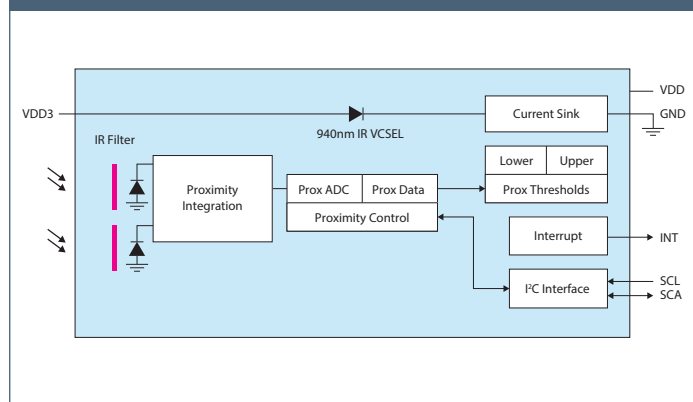
- Programmable proximity offset adjustment registers
- Proximity automatic ambient light subtraction
- Programmable analog gain and integration time
- 0.18µm process technology with 1.8V I²C
- 70 µA avg Active mode
- 0.7 µA sleep state
- Ultra small OLGA package
- Split near/far photodiodes and offset emitter/detector placement
- I²C fast-mode compatible interface
- Data Rates up to 400 kbit/s

Applications

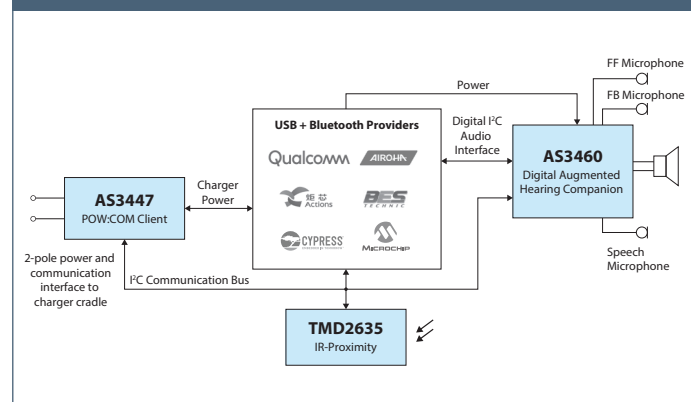
- True Wireless Stereo ear buds
- Smartphone Touchscreen Control
- Automatic Speakerphone enable
- Notebook and Monitor Security
- Mechanical Switch replacement
- Printer paper alignment and detection
- Industrial Process Control

Device	Package	I ² C Interface		Ordering Number
		Address	Bus Voltage	
TMD2635	OLGA	0X39	1.8V	TMD26354

Block Diagram



Applications Diagram



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