Product Document

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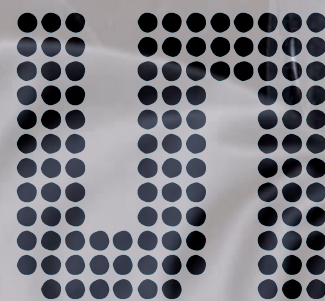
Proximity Detection Sensors
www.ams.com/TMD2672

TMD2672 – Proximity Detection Sensor Family

- Area-efficient digital proximity system module with integrated sensor and IR LED
- Proximity offset register compensates for optical system crosstalk
- Ideal for use behind spectrally distorting materials in short distance detection applications

We provide innovative analog solutions to the most challenging applications in sensor and sensor interfaces, power management, and wireless.

General Description

The TMD2672 family of devices provides a complete proximity detection system and digital interface logic in a single 8-pin surface mount module. The devices are register-set and pin-compatible with the TMD2671 series and include new and improved proximity detection features. The proximity detection includes improved signal-to-noise and accuracy. A proximity offset register allows compensation for optical system crosstalk between the IR LED and the sensor. To prevent false proximity data measurement readings, a proximity saturation indicator bit signals that the internal analog

circuitry has reached saturation. Interrupts have been enhanced with the addition of a sleep-on-interrupt feature that also allows for a single cycle operation. The device internal state machine provides the ability to put the device in a low-power mode in between proximity measurements, providing very low average power consumption. The proximity detection system includes a digital proximity sensor, LED driver and IR LED, which are factory trimmed to eliminate the need for end-equipment calibration due to component variations.

Applications

- Mobile Phone Touchscreen Control
- Automatic Speakerphone enable
- Notebook and Monitor Security
- Mechanical Switch
- Printer paper alignment and detection
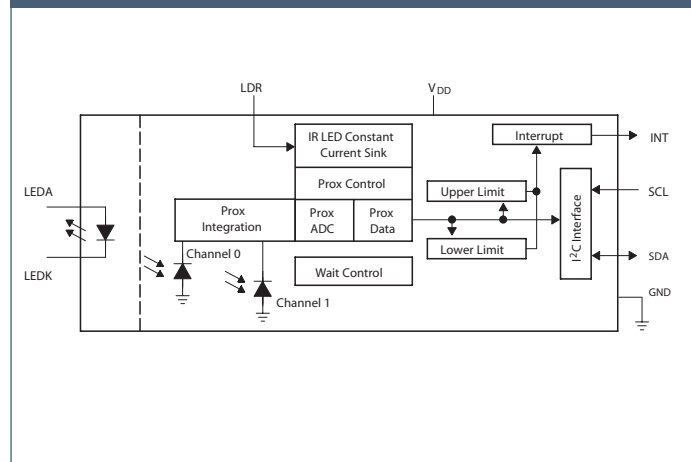- Industrial Process Control

Device	Package	I²C Interface		Ordering Number
		Address[1]	Bus Voltage	
TMD26721	8	0X39	V$_{DD}$	TMD26721
TMD26723	8	0X39	1.8V	TMD26723

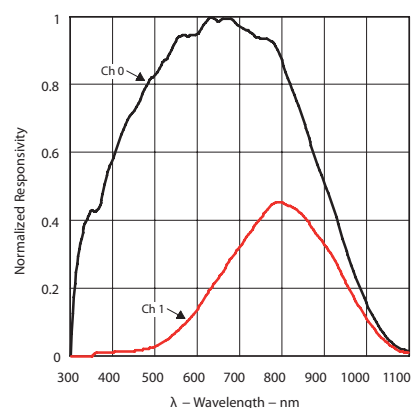[1] Alternate address option available

Features

- Proximity sensor, LED driver, and IR LED in module
- Digital Proximity Detection
  - programmable analog gain, integration time, offset
  - current sink driver for external IR LED
  - saturation indicator
- Programmable interrupt with persistence filter
- Power Management
  - low power 2.2 µA sleep-state
  - 90 µA wait-state with programmable wait time
- I²C fast-mode compatible interface
  - 400 kbits/s data rate
  - V$_{DD}$ or 1.8-V Bus interface
- 3.94 x 2.36 mm Dual Flat No-Lead Module-8

Functional Block Diagram

Spectral Responsivity