TSL2520

Highly Sensitive Ambient Light Sensor

General Description

The TSL2520 features ambient light sensing and comes in a low-profile and small footprint, L2.0mm x W1.0mm x H0.5mm optical QFN package.

The Ambient Light Sensing function provides two concurrent ambient light sensing channels, which can be arbitrarily connected to the photodiodes via a programmable multiplexer. TSL2520 incorporates a set of Infrared photodiodes and a set of Clear photodiodes. The Clear photodiode area is covered with a UV/IR blocking filter.

This architecture accurately measures ambient light and enables the calculation of irradiance of different light sources. Calculation results help to improve display appearance and picture taking.

Key Benefits & Features

The benefits and features of TSL2520 are listed below:

Figure 1:
Added Value of Using TSL2520

Benefits	Features

• Invisible ALS sensing under any glass type	• Configurable, high sensitivity
	  • Programmable gain and integration time
	  • 8192x dynamic range by gain adjustment only
	  • 1mlux detectable illuminance
	• Tailored ALS response
	  • UV/IR blocking filter for Clear channel
	• ALS interrupt with thresholds

• Unique fast ALS integration mode	• Flicker-immune ALS sensing with programmable integration time
• Low power consumption and minimum I^2C traffic	• $1.8V_{DD}$ operation • Configurable sleep mode • Interrupt-driven device • I^2C interface up to 1 Mbit/s (Fast mode)
• Integrated status checking for all functions	• Digital and analog saturation flags

Applications

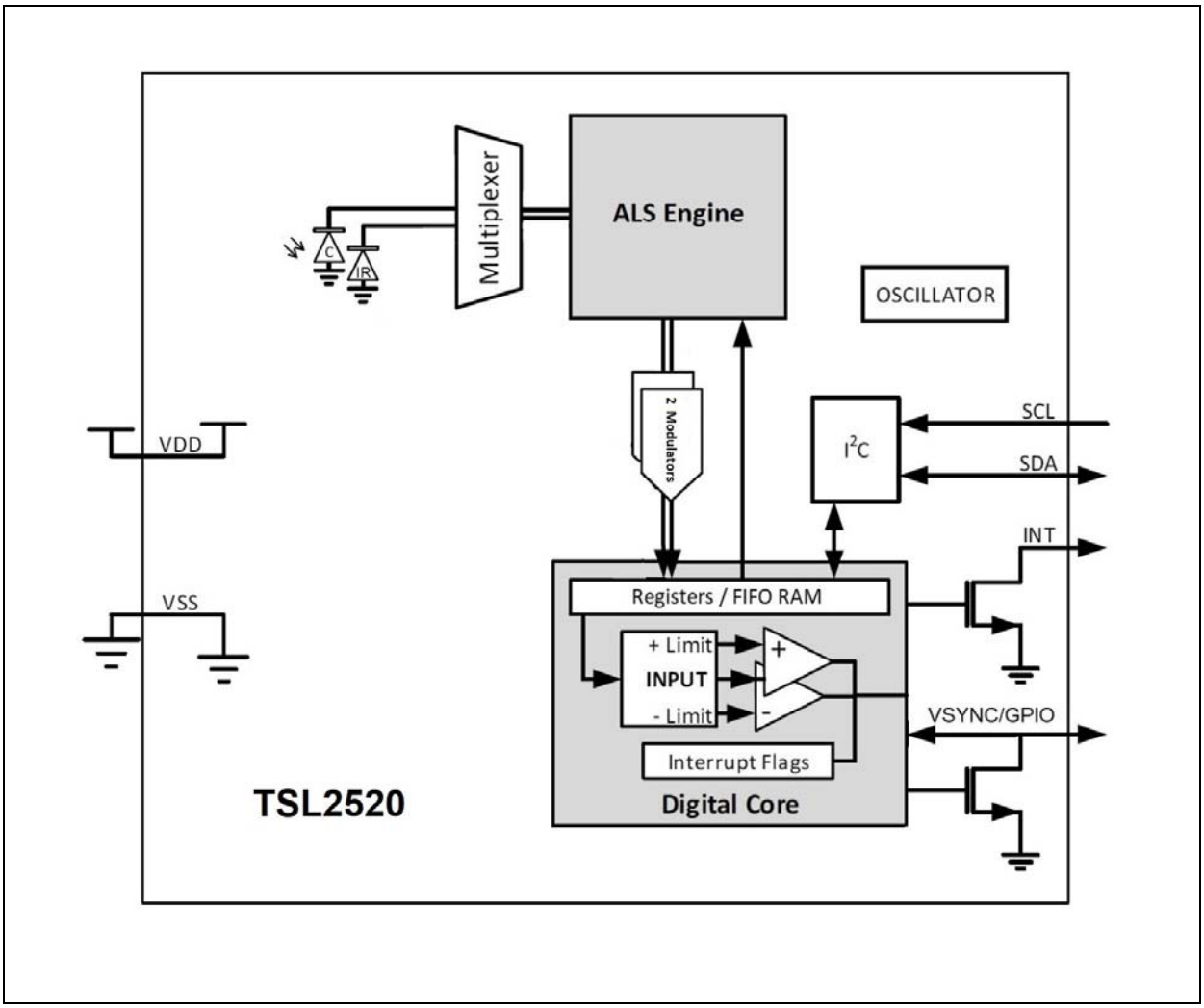
TSL2520 integrates multiple applications within one device. The applications for TSL2520 include:

- Indoor/outdoor brightness information
- Brightness management for displays
- Camera image correction assistance

Block Diagram

The functional blocks of this device are shown below:

Figure 2:
Functional Blocks of TSL2520



Pin Assignments

Device pinout is described below.

Figure 3:
Pin Diagram of TSL2520 (top view)

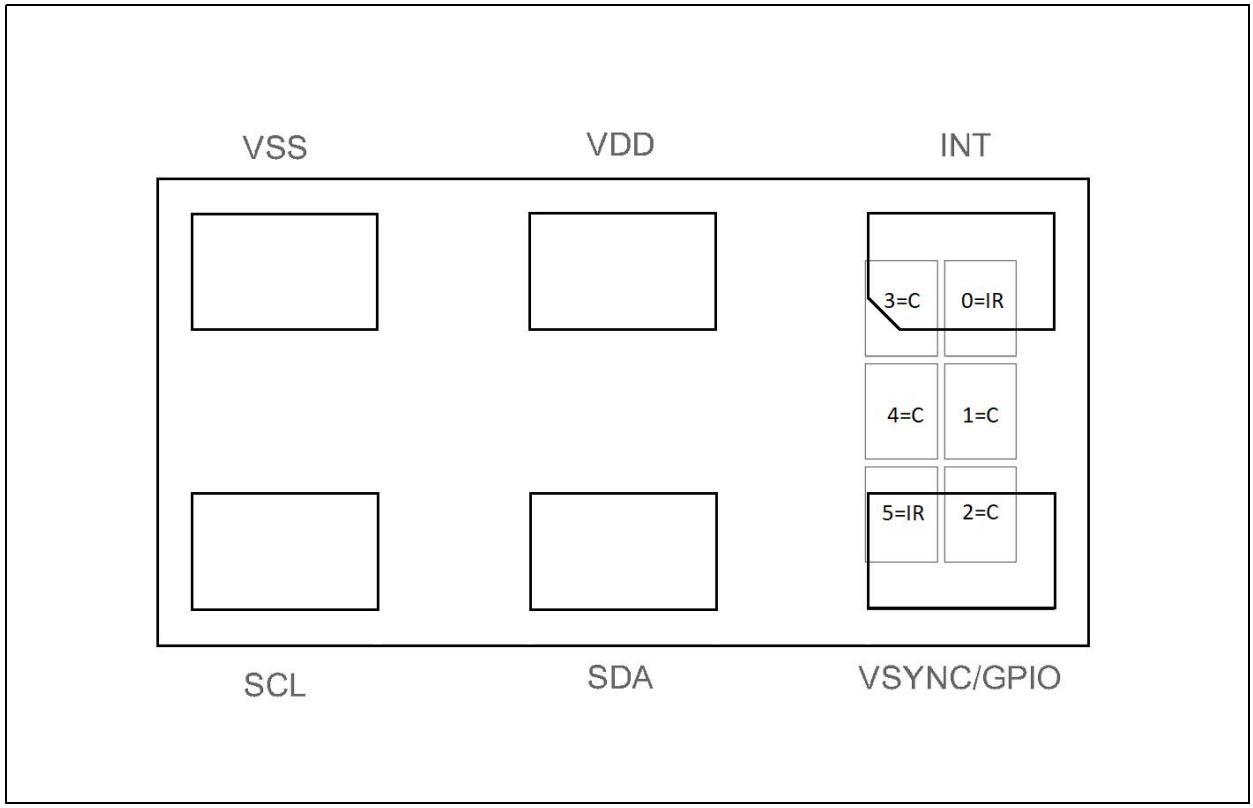


Figure 4:
Pin Description of TSL2520

Pin Number	Pin Name	Description
1	INT	Interrupt. Open-drain output.
2	VDD	Supply voltage (1.8V)
3	VSS	Ground. All voltages are referenced to VSS.
4	SCL	I^2C serial clock terminal
5	SDA	I^2C serial data I/O terminal
6	VSYNC/GPIO	Synchronization input OR General Purpose open-drain Input/Output

Ordering & Contact Information

Figure 5:
Ordering Information

Ordering Code	Address	Interface	Delivery Form	Delivery Quantity
TSL25203	0x39	1.8V I^2C	Tape & Reel	10000 pcs/reel

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Revision Information

This short datasheet was derived from v1-00 of full datasheet.