# Product Document

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# **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	<ul> <li>Configurable, high sensitivity <ul> <li>Programmable gain and integration time</li> <li>8192x dynamic range by gain adjustment only</li> <li>1mlux detectable illuminance</li> </ul> </li> <li>Tailored ALS response <ul> <li>UV/IR blocking filter for Clear channel</li> <li>ALS interrupt with thresholds</li> </ul> </li> </ul>	
Unique fast ALS integration mode	<ul> <li>Flicker-immune ALS sensing with programmable integration time</li> </ul>	
<ul> <li>Low power consumption and minimum I<sup>2</sup>C traffic</li> </ul>	<ul> <li>1.8V<sub>DD</sub> operation</li> <li>Configurable sleep mode</li> <li>Interrupt-driven device</li> <li>I<sup>2</sup>C interface up to 1 Mbit/s (Fast mode)</li> </ul>	
Integrated status checking for all functions	Digital and analog saturation flags	



### **Applications**

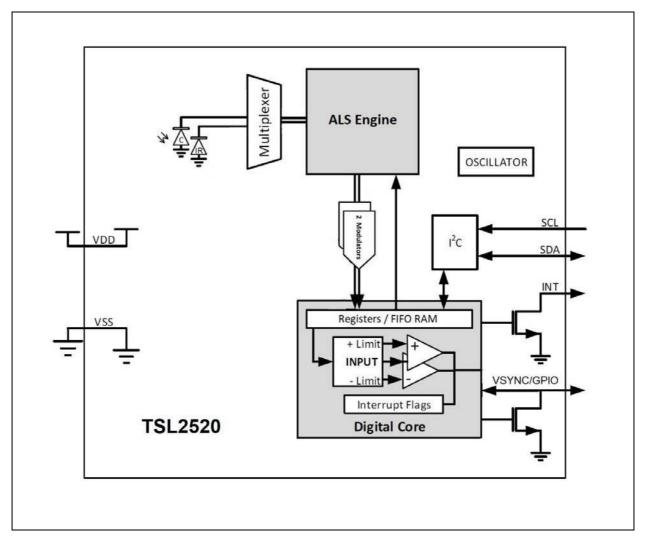
TSL2520 integrates multiple applications within one device. The applications for TSL2520 include:

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

# **Block Diagram**

The functional blocks of this device are shown below:

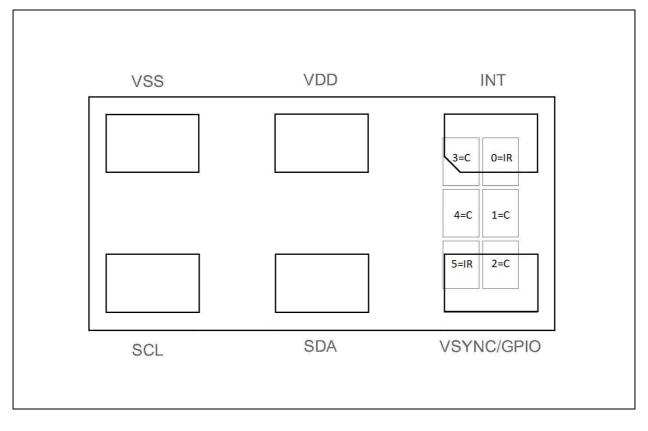
Figure 2: Functional Blocks of TSL2520



# **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 <sup>2</sup> C serial clock terminal	
5	SDA	I <sup>2</sup> C 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 <sup>2</sup> C	Tape & Reel	10000 pcs/reel

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# **Revision Information**

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