Digital Proximity and Ambient Light sensor
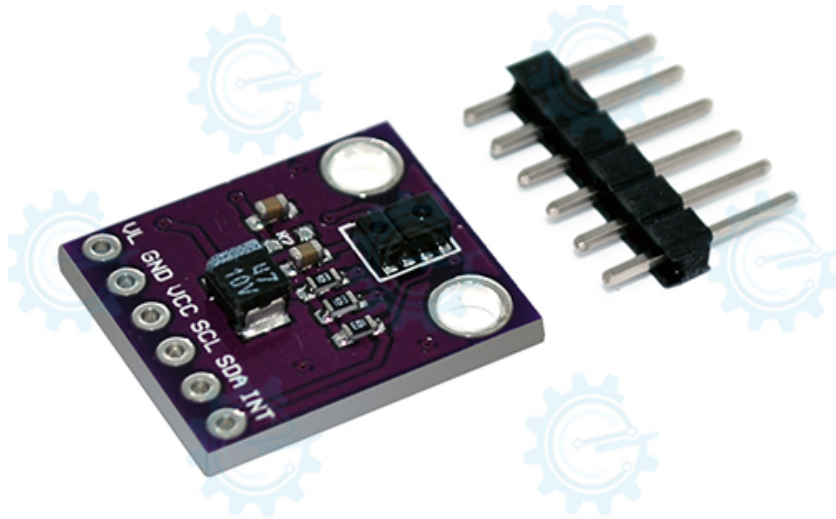
Technical Manual Rev 1r0

APDS-9930

The **APDS-9930 Digital Proximity and Ambient Light sensor** provides digital ambient light sensing (ALS), IR LED and a complete proximity detection system. The proximity detection ranges 100mm (without front glass), it is also operates well from bright sunlight to dark rooms. On the wide dynamic range allows for operation in short distance detection behind dark glass such as cellphone. APDS-9930 applications are for cell phone backlight dimming, cell phone touch-screen disable, notebook/monitor security and for automatic speakerphone enable and menu pop-up.

FEATURES:

- *Arduino Compatible (Arduino UNO)*
- *Ambient Light Sensing (ALS)*
- *Proximity Detection*
- *Programmable Wait Timer*
- *I2C Interface Compatible*
- *Sleep Mode Power (2.2uA Typical)*
- *Small Package L3.94 x xW2.36xH1.35mm*

GENERAL SPECIFICATIONS:

Input Supply: *3.3VDC*
Digital output current: *20mA*
Interface: *I2C communication*
Operating Ambient Temperature:
      (-30 degC to 85 degC)
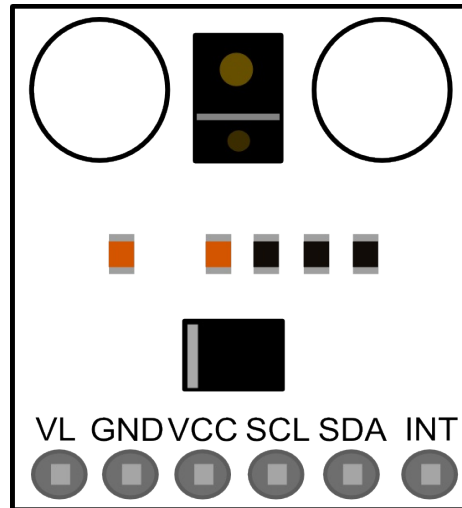**PCB Dimensions: 18mmx16.5mm**

Figure 1. Major parts presentation of APDS-9930 Digital Proximity and Ambient Light Sensor

Table 1. I/O Pins Configuration

PIN	NAME	TYPE	DESCRIPTION
1	SDA	I/O	I2C Serial data I/O terminal - serial data I/O for I2C
2	INT	O	Interrupt - open drain.
3	LDR	I	LED driver for proximity emitter - up to 100mA , open drain
4	LEDK	O	LED Cathode, connect to LDR pin in most systems to use internal LED driver circuit
5	LEDA	I	LED Anode, connect to Vbatt on PCB
6	GND		Power supply ground. All voltages are referenced to GND.
7	SCL	I	I2C Serial clock input terminal - clock signal for I2C serial data.
8	VDD		Power Supply voltage.

Table 2. Pin descriptions

NAME	TYPE	DESCRIPTION
GND		Ground
VCC		Input Supply voltage, 3.3VDC
SCL	I	I2C Serial clock input terminal - clock signal for I2C serial data.
SDA	I/O	I2C Serial data I/O terminal - serial data I/O for I2C
INT	O	Interrupt pin

APDS-9930 Digital Proximity and Ambient Light Sensor

Pin Assigment
Sensor to Gizduino
VL   -   NC
GND   -   GND
VCC   -   3.3V
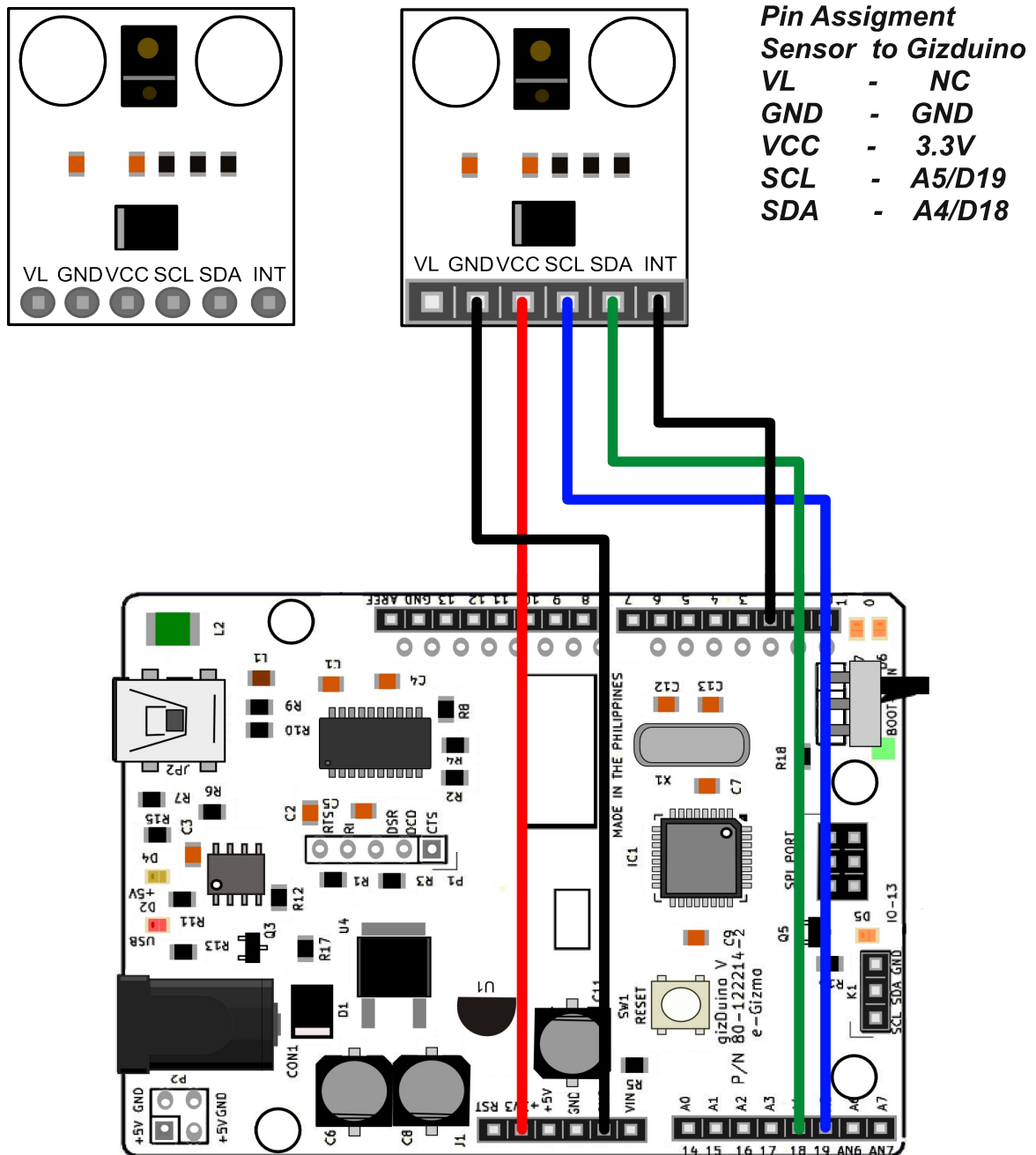**SCL   -   A5/D19**
SDA   -   A4/D18

Figure 2. Sample Appication for APDS-9930 Digital Proximity and Ambient Light sensor with gizDuino ATmega328P v5.