

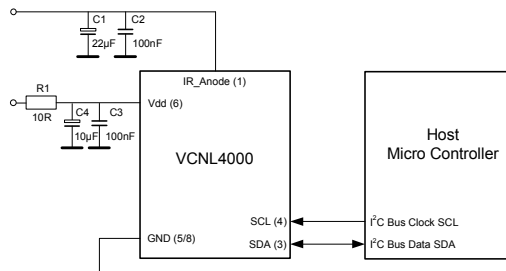
VCNL4000

Short Distance Proximity / Ambient Light Sensor with I²C Bus Interface



DESCRIPTION

The VCNL4000 is a proximity sensor with integrated ambient light sensor. It is the industry's first optical sensor to combine an IR Emitter, Photo-PIN-Diode, Ambient Light Detector and signal processing IC into a single package and still reaches proximity distances of up to 200mm. This stand alone single component approach greatly simplifies the use and design-in of these features in various consumer and industrial applications. VCNL4000 comes in a miniature lead less package (LLP) for surface mounting and its low profile makes it ideal for low height design requirements. Through its standard I²C bus serial digital interface, it allows an easy access of "Proximity Signal" and "Light intensity" without complex calculation and programming by external controller.



Key Features

- Package type: surface mount
- Dimensions (L x W x H in mm): 3.95 x 3.95 x 0.75
- Integrated module with ambient light sensor, proximity sensor and signal conditioning IC
- Supply voltage range: 2.5V to 3.6V
- Communication via I²C interface
- I²C Bus voltage supply range: 1.7V to 5V
- Low stand by current consumption: 1.5µA

Proximity function

- Built in infrared LED and photo-pin-diode for proximity function
- 16-bit effective resolution for proximity detection range ensures excellent cross talk immunity
- Programmable LED drive current from 10mA to 200mA (in 10mA steps)
- Programmable measurement rate from 1Hz to 250Hz
- Excellent ambient light suppression by signal modulation
- Proximity distance up to 200mm

Ambient light function

- Built in ambient light photo-pin-diode with close to human eye sensitivity characteristic
- 16-bit dynamic range for ambient light detection from 0.2lx to 13klx
- 100Hz and 120Hz flicker noise rejection

APPLICATIONS

- Proximity sensor for mobile devices (e.g. Smart Phones, Touch Phones, PDA, GPS, digital still cameras) for touch screen locking, power saving, etc
- Integrated ambient light function for display / keypad contrast control and dimming of mobile devices
- Proximity / optical switch for consumer, computing and industrial devices and displays
- Dimming control for consumer, computing and industrial displays

Tools

- Evaluation Kit including software



RoHS
COMPLIANT

GREEN
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