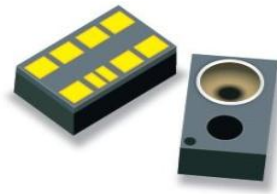


HS2000 Digital Proximity Sensor with built-in IR LED



Description

The HS2000 combines an advanced digital proximity sensor, IR LED and LED driver and tri-mode I²C interface with interrupt capability in an integrated monolithic device. Multiple power management features and very low active sensing power consumption directly address the power requirements of battery operated mobile phones and mobile internet devices. The proximity sensor measures reflected light intensity with a high degree of precision and excellent ambient light rejection. The HS2000 enables a proximity sensor system with a 32:1 programmable LED drive current range and a 30dB overall proximity detection range. The HS2000 is ideal for improving the user experience by enhancing the screen interface with the ability to measure distance for near/far detection in real time.

Proximity Sensing

- Proximity detection distance threshold I²C programmable with 12bit resolution and eight integration time ranges. (16-bit effective resolution)
- Effective for measuring distances up to 100mm and beyond
- Excellent ambient light rejection including sunlight (up to 50K lux) and CFL interference.
- Programmable LED drive current from 5mA to 160mA in 5mA steps, no external resistor required.
- User programmable LED pulse frequency.

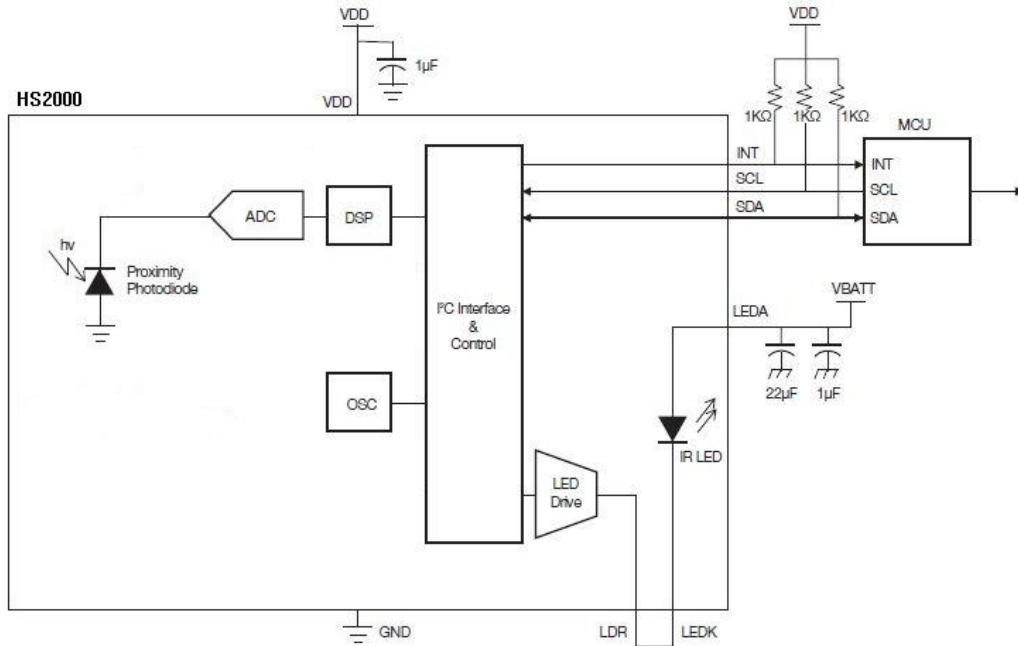
Features

- Proximity sensor and IR LED in a single package
- Very low power consumption.
 - Stand-by current 5 μ A (monitoring I²C interface only, V_{dd}=3V)
 - Proximity sensing average operational current 100 μ A.
 - Average LED sink current 75 μ A.

Additional Features

- Programmable interrupt function including independent upper and lower threshold detection or threshold based hysteresis for proximity.
- Level or Edge Triggered interrupts.
- Proximity persistence feature reduces interrupts by providing hysteresis to filter fast transients such as camera flash
- Automatic power down after single measurement or continuous measurements with programmable interval time
- Wide operating voltage range. (2.3V to 3.6V)
- Wide operating temperature range. (-40°C to 80°C)
- I²C serial communication port.
 - Standard mode – 100 kHz
 - Fast mode – 400 kHz
 - High speed mode – 3.4 MHz
- RoHS Compliant (Pb-Free, Halogen Free/BFR Free)
- Moisture Sensitivity Level , MSL3.

Application Block Diagram



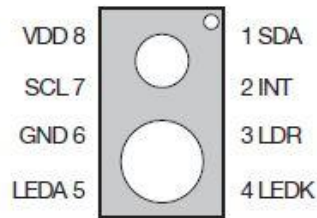
Applications

Senses human presence in terms of distance and motion (gestures) and saving display power in applications .

such as:

- Smart phones, mobile internet devices, MP3 players, GPS.
- Mobile device displays and backlit keypads.

Package Information



HS2000

- 8 pin DFN Package

Ordering Information

Part No.	Dimensions	Pin count	Packaging	Quantity
HS2000	3.94x2.36x1.3	8	Tape&Reel	2,500