On / Off Detection in AR / MR / VR Glasses Using a Digital Proximity Sensor

VISHAY

The DNA of tech.®

MR Glasses
(Mixed Reality)

AR Glasses
(Augmented Reality)

VR Glasses
(Virtual Reality)
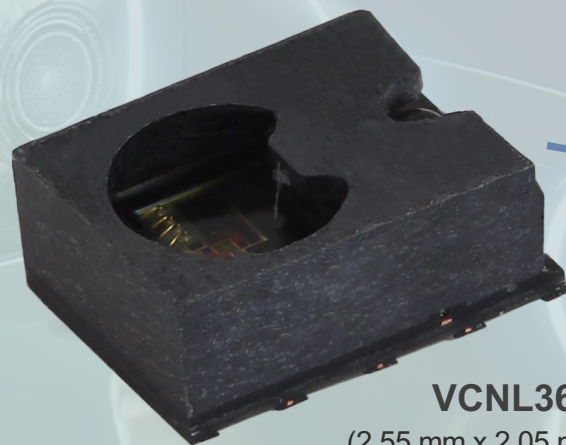
VCNL36826S
(2.55 mm x 2.05 mm x 1 mm)

Fully integrated
digital proximity sensor with photodiode, emitter, and ASIC; up to 20 cm detection distance

Low power consumption
as low as 6 µA average current draw at 3.3 V

Reliable
with best in class signal to noise ratio (SNR)

Precise
through an integrated chip-level laser emitter (VCSEL)

The sensor uses an integrated laser to emit a focused beam of light, followed by the integrated photodiode monitoring for any returning light that corresponds to the wavelength of the laser. When the headset is worn, the amount of reflected light increases significantly due to the proximity of the user. This Information enables the headset to trigger responsive actions, such as powering the display on or off, or switching to standby mode. The measurement cycle is automatically regulated by the application-specific integrated circuit (ASIC), which allows for adjustments in frequency, power, sensitivity, and more!

On / Off Detection

Datasheet

Application Note