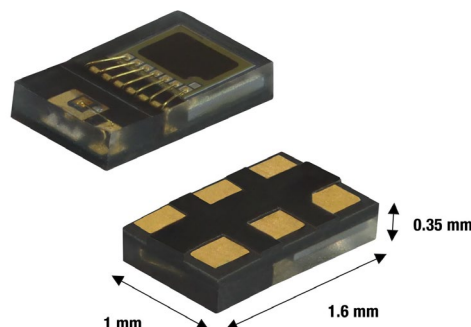


## For Battery-Powered Consumer Applications, Short Distance Proximity Sensor Features a VCSEL and Smart Dual I<sup>2</sup>C Slave Address, Offers Idle Current Down to 5 $\mu$ A and 14-Bit Resolution in Space-Saving Package

### Product Benefits:

- Integrates a vertical-cavity surface-emitting laser (VCSEL), photodiode, application-specific integrated circuit (ASIC), and 16-bit ADC
- Smart dual I<sup>2</sup>C slave address
- Compact 1.6 mm x 1.0 mm x 0.35 mm transparent mold package
- Isolation wall design delivers excellent crosstalk immunity
- Proximity resolution of 14 bits
- Sunlight cancellation immunity up to 200 klx
- 50 mm range
- Low idle current of 5  $\mu$ A
- Typical rated supply voltage of 1.8 V
- Programmable interrupt function
- Intelligent cancellation reduces crosstalk
- A smart persistence scheme ensures accurate sensing and faster response time
- VCSEL wavelength peaks at 940 nm and has no visible “red-tail”
- RoHS-compliant, halogen-free, and Vishay Green



### Market Applications:

- Detect if users are wearing or not wearing smart wearable devices, including true wireless stereo (TWS) earphones, virtual reality / augmented reality (VR / AR) headsets, and smart glasses
- Touchless dispensing and lid-off detection in consumer appliances

### The News:

The Optoelectronics group of Vishay Intertechnology introduces a new fully integrated short distance proximity sensor designed to increase efficiency, design flexibility, and performance in consumer applications. Featuring a VCSEL, the Vishay Semiconductors VCNL36829UM combines a photodiode, ASIC, 16-bit ADC, and smart dual I<sup>2</sup>C slave address in a compact 1.6 mm x 1.0 mm x 0.35 mm transparent mold package with an isolation wall design.

- Compared to previous-generation solutions, the proximity sensor offers a 44 % smaller volume, higher proximity resolution, and stronger sunlight immunity
- The VCNL36829UM delivers superior proximity detection while reducing power consumption to increase efficiency in space-constrained, battery-powered applications
- To lower costs, the device’s smart dual I<sup>2</sup>C slave address allows for the connection of two proximity sensors without the need for a multiplexer



- The sensor's programmable interrupt function allows designers to specify high and low thresholds, reducing continuous communication with the microcontroller and lowering system power consumption

### The Key Specifications:

|                                  |                  |
|----------------------------------|------------------|
| Part number                      | VCNL36829UM      |
| Function                         | PS + VCSEL       |
| Package size (mm)                | 1.6 x 1.0 x 0.35 |
| Supply voltage (V)               | 1.65 to 2.0      |
| I <sup>2</sup> C bus voltage (V) | 1.08 to 3.6      |
| Max. VCSEL driving current (mA)  | 18               |
| Operating range (mm)             | 50               |
| Supply current, idle state (μA)  | 5                |

### Availability:

Samples and production quantities of the VCNL36829UM are available now, with lead times of 15 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?80580> (VCNL36829UM)

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