Featuring a VCSEL and Smart Dual I²C Slave Address, VCNL36828P Proximity Sensor Offers Idle Current Down to 5 μA in Compact 2.0 mm x 1.0 mm x 0.5 mm SMD Package for Battery-Powered Consumer Applications, Including TWS Earphones and VR / AR Headsets

Product Benefits:

- Features a vertical-cavity surface-emitting laser (VCSEL) with a 940 nm peak wavelength and no visible “red-tail”
- Combines a photodiode, application-specific integrated circuit (ASIC), 16-bit ADC, and smart dual I²C slave address in a compact 2.0 mm by 1.0 mm by 0.5 mm surface-mount package
- Low idle current of 5 μA
- Sunlight cancellation up to 140 klx
- 200 mm operating range
- Typical rated supply voltage of 1.8 V
- A programmable interrupt function allows designers to specify high and low thresholds to reduce continuous communication with the microcontroller
- Intelligent cancellation reduces cross-talk
- A smart persistence scheme ensures accurate sensing and faster response time
- RoHS-compliant, halogen-free, and Vishay Green

Market Applications:

- Automatic screen wake-up and turn-off functions in smartphones and smart watches
- User detection in wireless stereo (TWS) earphones, virtual reality / augmented reality (VR / AR) headsets, and smart glasses

The News:

The Optoelectronics group of Vishay Intertechnology introduces a new fully integrated proximity sensor designed to increase efficiency and performance in consumer applications.

- Compared to previous-generation solutions, the VCNL36828P offers a 20 % smaller package, 20 % lower idle current, and 40 % higher sunlight cancellation
  - Delivers superior proximity detection while reducing power consumption to increase efficiency in space-constrained, battery-powered applications
- To lower costs, the proximity sensor’s smart dual I²C slave address allows for the connection of two proximity sensors without the need for a multiplexer

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The Key Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part number</td>
<td>VCNL36828P</td>
</tr>
<tr>
<td>Function</td>
<td>PS + VCSEL</td>
</tr>
<tr>
<td>Package size (mm)</td>
<td>2.0 x 1.0 x 0.5</td>
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<tr>
<td>Supply voltage (V)</td>
<td>1.65 to 2.0</td>
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<tr>
<td>I²C bus voltage (V)</td>
<td>1.2 to 3.6</td>
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<tr>
<td>Max. VCSEL driving current (mA)</td>
<td>20</td>
</tr>
<tr>
<td>Operating range (mm)</td>
<td>200</td>
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<tr>
<td>Supply current, idle state (μA)</td>
<td>5</td>
</tr>
<tr>
<td>Proximity resolution</td>
<td>16 bits</td>
</tr>
</tbody>
</table>

Availability:
Samples and production quantities of the VCNL36828P are available now, with lead times of 14 weeks.

To access the product datasheet on the Vishay Website, go to [http://www.vishay.com/ppg?80306](http://www.vishay.com/ppg?80306) (VCNL36828P)

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