



VCNT2030 VCSEL-Based Reflective Optical Sensor Features CTR of 31 %, Sensing Distance to 15 mm, and Lower Power Consumption in 1.85 mm by 1.2 mm by 0.6 mm Package

Product Benefits:

- Miniaturized construction (1.85 mm x 1.2 mm x 0.6 mm) that allows for space-efficient applications.
- Sensing distance of 15 mm, three times greater than the closest competitor.
- Low 8 mA driving current significantly reduces power consumption, maintaining the same performance level as 20 mA infrared emitters.
- Detection range of 0.3 mm to 6 mm, well-suited for precise sensing applications.
- Typical CTR of 31%, over 100% higher than previous solutions and the closest competing sensor.

Market Applications:

- Optical switching in industrial infrastructure, home and building controls, notebook and desktop computers, home appliances, consumer electronics, and metering applications
- Optical encoding for motor control in e-bikes, golf carts, tractors, and harvesters
- Paper presence detection in printers and scanners

The News:

Vishay announces a new reflective optical sensor for industrial, computer, consumer, and mobility applications. Saving space compared to previous-generation solutions — while delivering improved performance with a higher current transfer ratio (CTR), increased sensing distance, and lower power consumption — the Vishay Semiconductors VCNT2030 features a vertical-cavity surface-emitting laser (VCSEL) and a silicon phototransistor in a miniature 1.85 mm by 1.2 mm by 0.6 mm surface-mount package.

- **Improved Performance:** The new optical sensor provides a higher current transfer ratio (CTR), increased sensing distance, and lower power consumption compared to previous models.
- **Innovative Technology:** The VCNT2030 features a vertical-cavity surface-emitting laser (VCSEL) and a silicon phototransistor for superior optical sensing.
- **Advanced Proximity Performance:** The VCSEL's narrow emission angle enhances internal crosstalk suppression and improves proximity performance, even behind cover glass.
- **Extended Sensing Distance:** The device offers a remarkable sensing distance of 15 mm, three times greater than the closest competitor.
- **PCB Space Efficiency:** The VCNT2030 saves > 40 % of PCB space compared to previous-generation devices, making it a suitable choice for space-constrained applications.
- **Lower Power Consumption:** The low 8 mA driving current significantly reduces power consumption, maintaining the same performance level as 20 mA infrared emitters.
- **Enhanced Detection Range:** The sensor features a detection range of 0.3 mm to 6 mm, well-suited for precise sensing applications.
- **Increased CTR:** The device boasts a typical CTR of 31 %, over 100 % higher than previous solutions and the closest competing sensor.



NEW PRODUCT INFORMATION



Product Group: Vishay Semiconductors, Optocouplers / August 2023

- **Compliance and Sustainability:** The VCNT2030 complies with the RoHS and is halogen-free, and Vishay Green certified. It also features a Moisture Sensitivity Level (MSL) of 3 for reflow soldering, meeting J-STD-020 standards.

Availability:

Samples and production quantities of the VCNT2030 are available now, with lead times of eight to 16 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?80223> (VCNT2030)

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