



Vishay Intertechnology Optical Sensors With Photodiode Output Enable High Speed, Wear-Free Optical Data Communication

October 13, 2026

Automotive Grade Devices Offer Rise and Fall Times Down to 9 ns, Data Rates Up to 6 Mbit/s, and Flexible Side- or Top-View Mounting Options

MALVERN, Pa., Oct. 13, 2026 (GLOBE NEWSWIRE) -- The Optoelectronics group of Vishay Intertechnology, Inc. (NYSE: VSH) today introduced four new Automotive Grade optical sensors to address growing challenges in modern battery management, energy storage, and industrial automation systems. Combining an infrared (IR) emitter and PIN photodiode in miniature 4.4 mm x 2.25 mm x 1.9 mm surface-mount packages, the Vishay Semiconductors [VCND2040X02](#), [VCND2040SLX02](#), [VCND2045X02](#), and [VCND2045SLX02](#) enable reliable, flexible, and wear-free optical communication with data transmission up to 6 Mbit/s between system nodes.

AEC-Q102 qualified, the devices released today support decentralized communication between battery cells and system nodes, helping designers improve system reliability, safety, and performance. Unlike other wireless RF technologies, the sensors provide an optical communication link that is immune to EMC and EMI / RFI interference and more resilient to cyberattacks, making them ideal for automotive and industrial environments.

In battery management applications, the devices enable reliable communication for cell monitoring / balancing and improve overall system efficiency. Additional applications include energy storage systems, industrial automation, optical switching, optical encoders, and position sensors.

The VCND2040X02 and VCND2040SLX02 feature a single-stack IR emitter and typical rise and fall times of 18 ns, while the VCND2045X02 and VCND2045SLX02 offer a double-stack IR emitter and typical rise and fall times of 9 ns. The devices' fast response times enable their high speed performance while supporting simultaneous bi-directional data transfer, allowing designers to create more efficient data links.

The sensors feature two independent lenses and an integrated crosstalk barrier between the IR emitter and detector to minimize optical interference. This unique design supports free to air optical communication over short ranges, which can be extended through the use of external secondary optics. For example, coupling with optical fiber enables data transmission over several meters, including through complex routing paths, bends, and confined spaces with minimal energy loss.

A wettable flank lead frame design allows the VCND2040X02, VCND2040SLX02, VCND2045X02, and VCND2045SLX02 to be mounted in either side-view or top-view orientation, providing greater flexibility in sensor positioning and assembly, while simplifying PCB designs. RoHS compliant, halogen-free, and Vishay Green the devices feature a Moisture Sensitivity Level (MSL) of 3.

Device Specification Table:

Part number	VCND2040X02	VCND2040SLX02	VCND2045X02	VCND2045SLX02
Package	Top view	Side view	Top view	Side view
Radiant intensity (typ.)	35 mWsr		65 mWsr	
Radiant power (typ.)	8 mW		12 mW	
Rise / fall time	18 ns		9 ns	
Forward voltage (V _F , @ I _F = 24 mA)	1.5 V		2.5 V	

Samples and production quantities of the new optical sensors are available now, with lead times of eight weeks.

Vishay manufactures one of the world's largest portfolios of discrete semiconductors and passive electronic components that are essential to innovative designs in the automotive, industrial, computing, consumer, telecommunications, military, aerospace, and medical markets. Serving customers worldwide, Vishay is **The DNA of tech**.[®] Vishay Intertechnology, Inc. is a Fortune 1000 Company listed on the NYSE (VSH). More on Vishay at www.Vishay.com.

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Vishay on Facebook: <http://www.facebook.com/VishayIntertechnology>

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Links to product datasheets:

<http://www.vishay.com/ppg?80347> (VCND2040X02, VCND2040SLX02)

<http://www.vishay.com/ppg?80514> (VCND2045X02, VCND2045SLX02)

Link to product photo:

<https://www.flickr.com/photos/205032290@N04/albums/72177720336000585>

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