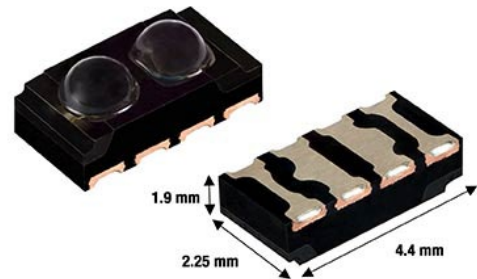


Automotive Grade Optical Sensors With Photodiode Output Enable High Speed, Wear-Free Optical Data Communication, Offer Rise and Fall Times Down to 9 ns, Data Rates Up to 6 Mbit/s, and Flexible Side- or Top-View Mounting Options

Product Benefits:

- Photodiode output
- Compact 4.4 mm x 2.25 mm x 1.9 mm surface-mount packages
- Fast data transmission up to 6 Mbit/s
- AEC-Q102 qualified
- Available with single-stack (VCND2040X02 and VCND2040SLX02) and double-stack (VCND2045X02 and VCND2045SLX02) IR emitters
- Rise and fall times down to 9 ns
- Wettable flank lead frame design allows for mounting in either side-view or top-view orientation
- RoHS compliant, halogen-free, and Vishay Green
- Moisture Sensitivity Level (MSL) of 3



Market Applications:

- Decentralized communication between battery cells in automotive, energy distribution and storage, industrial automation, and home and building control systems
- Cell balancing in electric vehicles (EV)
- Position sensors, optical switching, and optical encoders

The News:

The Optoelectronics group of Vishay Intertechnology introduces four new Automotive Grade optical sensors with photodiode output for wear-free optical data transmission. 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 high speed data transmission up to 6 Mbit/s.

- The sensors deliver a data transmission line that is robust against cyberattacks, immune to EMC and EMI / RFI interference, and more reliable than other wireless RF technologies
- 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 VCND2040X02, VCND2040SLX02, VCND2045X02, and VCND2045SLX02 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



- The sensors' ability to be mounted in either side-view or top-view orientation provides greater flexibility in sensor positioning and assembly, while simplifying PCB designs

The Key Specifications:

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	

Availability:

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

To access the product datasheet on the Vishay Website, go to

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

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

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