

AEC-Q101 Qualified VCNT2025X01 Reflective Optical Sensor in Compact 2.5 mm by 2.0 mm by 0.6 mm FAM Package Saves Space, Features CTR of 33 % and High Temperature Operation to +110 °C for Improved Performance and Robustness

Product Benefits:

- AEC-Q101 qualified
- Compact 2.5 mm by 2.0 mm by 0.6 mm surface-mount package with wettable flanks
- Built-in daylight blocking filter greatly suppresses disturbing ambient light, thereby increasing the signal-to-noise ratio
- High temperature operation to +110 °C
- Detection range of 0.3 mm to 4.5 mm
- Emitter wavelength of 940 nm
- Typical output current of 6.6 mA
- Typical CTR of 33 % under test conditions
- Moisture Sensitivity Level (MSL) of 3 for reflow soldering according to J-STD-020
- RoHS-compliant, halogen-free, and Vishay Green



Market Applications:

- Optical switching in automotive electronic systems, office equipment, and home appliances; optical encoding in industrial automation systems; and paper presence detection in printers and copy machines

The News:

The Optoelectronics group of Vishay Intertechnology introduces a new AEC-Q101 qualified reflective optical sensor for automotive, smart home, industrial, and office applications. Offering a lower profile than previous-generation solutions — while delivering improved performance with a higher current transfer ratio (CTR) and operating temperature — the Vishay Semiconductors VCNT2025X01 combines an infrared emitter, silicon phototransistor detector, and daylight blocking filter in a miniature 2.5 mm by 2.0 mm by 0.6 mm surface-mount package.

- Features a compact construction in which the emitting light source and detector are arranged in the same plane
- The sensor's analog output signal at the phototransistor is dependent on the amount of light emitted by the IR LED and reflected off an object in the sensor's field of view
- Robust FAM package reduces crosstalk and features wettable flanks to enable optical inspection of the solder joints
- The VCNT2025X01's 0.6 mm profile is 0.2 mm lower than previous-generation devices, allowing the sensor to serve as a space-saving solution
- The closest competing device only offers operation to +80 °C
- The sensor's CTR is 24 % higher than previous-generation solutions and 23 % higher than the closest competing sensor



The Key Specifications:

- Size: 2.5 mm by 2.0 mm by 0.6 mm
- Operating temperature range: -40 °C to +110 °C
- Detection range: 0.3 mm to 4.5 mm
- Emitter wavelength: 940 nm
- Typical output current at 20 mA: 6.6 mA
- Current transfer ratio: 33 %

Availability:

Samples and production quantities of the new VCNT2025X01 are available now, with lead times of eight to 12 weeks for large orders.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?84895> (VCNT2025X01)

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