

AEC-Q102 Qualified Automotive Optocoupler in SOP-5 Package With 3.6 mm Width Saves Space While Improving Signal Transmission; Offers Industry-Best Minimum CMTI of 40 kV/ μ S and Maximum Repetitive Peak Isolation Voltage of 707 V_{peak}

Product Benefits:

- SOP-5 package with a narrow width of 3.6 mm
- Guaranteed common mode transient immunity (CMTI) of 40 kV/ μ S
- Maximum repetitive peak isolation voltage of 707 V_{peak}
- Comparative tracking index (CTI) of 400
- AEC-Q102 qualified
- Open collector output function
- RoHS-compliant and halogen-free



Market Applications:

- Isolated data communication, fast signal switching, ground signal isolation, and logic voltage level shifting in automotive, industrial, home and building control, and telecom applications
- Communication bus isolation for CAN, LIN, I²C, and SPI interfaces in electric (EV), hybrid electric (HEV), and low speed electric (LSEV) vehicles, as well as isolated drive circuit applications such as intelligent power module (IPM) drivers

The News:

Vishay Intertechnology introduces an automotive 1 MBd high speed optocoupler in a new SOP-5 package with a narrow width of 3.6 mm. Combining a comparative tracking index (CTI) of 400 with industry-leading minimum guaranteed common mode transient immunity (CMTI) of 40 kV/ μ S, the Vishay Semiconductors VOMHA43A is designed to deliver improved signal transmission quality and save space in applications requiring isolation voltages (V_{IORM}) up to 707 V_{peak}.

- While previous SOP-5 packages offered a width of 4.4 mm, the narrower SOP-5 of the VOMHA43A requires less PCB space, while supporting stackable designs
- The device's minimum CMTI — which is more than double that of the closest competing device — provides enhanced robustness against electrical spikes and RF and EMI issues
- While competing devices offer maximum repetitive peak isolation voltages of 567 V_{peak}, the optocoupler's isolation voltage performance of 707 V_{peak} meets the requirements of 400 V battery systems
- The VOMHA43A consists of a GaAlAs infrared emitting diode, optically coupled with an integrated photodetector and a high speed transistor. The photodetector is junction-isolated from the transistor to reduce miller capacitance effects
- The optocoupler's open collector output function allows designers to adjust load conditions when interfacing with different logic systems



- A Faraday shield on the detector chip allows the device to reject and minimize high input to output common mode transient voltages
- The VOMHA43A is pin to pin compatible with leading competing parts to provide a direct replacement and eliminate the need for electrical and mechanical redesigns

The Key Specifications:

- Maximum repetitive peak isolation voltage: 707 V_{peak}
- CMTI
 - Minimum: 40 kV/μS
 - Typical: 50 kV/ μS
- Package: SOP-5
- Operating temperature range: -40 °C to +125 °C

Availability:

Samples and production quantities of the VOMHA43A are available now, with lead times of six weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?80341> (VOMHA43A)

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