

ISSUE: [August 2026](#)

Optocoupler Delivers High Isolation Ratings For 800-V EV Batteries

From [Vishay Intertechnology](#), the Vishay Semiconductors VOLA617A is an automotive-grade phototransistor optocoupler designed to deliver signal transmission with high galvanic isolation for electric vehicles (EV)—including emerging 800-V battery architectures—and industrial automation systems. The optocoupler combines an isolation voltage of 5000 Vrms with a V_{IORM} of 1414 Vpeak and a V_{IOTM} of 8000 Vpeak in a 4-pin LSOP low-profile package (see the figure).

The device is well suited for grid-connected on-board chargers (OBCs), dc-dc converters, battery management systems (BMSs), isolated wake-up signals, and any system control with galvanic and noise isolation. According to the company, while most automotive optocouplers can't be used for battery voltages exceeding 500 V—limiting them to traditional 400-V EV platforms—the ability of the VOLA617A to isolate dc voltages up to 1000 V enables its use in next-generation high-voltage EV architectures.

The VOLA617A consists of an infrared emitting diode, optically coupled to a silicon planar phototransistor detector in a low-profile package with creepage and clearance distances of ≥ 8 mm. The device is available in four current transfer ratio (CTR) ranges and features a high 80-V collector-emitter voltage rating, allowing for more design flexibility.

The optocoupler operates over a wide -40°C to $+125^{\circ}\text{C}$ temperature range—with a junction temperature capability up to $+145^{\circ}\text{C}$ —while providing low coupling capacitance of 0.5 pF and high-common mode transient immunity. Exceeding rigorous requirements for automotive-grade performance and reliability, the VOLA617A's robust package provides an extra safety margin by meeting dual AEC-Q102 qualification standards. The device is RoHS-compliant, halogen-free, and Vishay Green.

Samples and production quantities of the VOLA617A are available now, with lead times of eight weeks. For more information, see the VOLA617A product [page](#).



Figure. The optocoupler's ability to isolate dc voltages up to 1000 V enables its use in next-generation high-voltage EV architectures. It consists of an infrared emitting diode, optically coupled to a silicon planar phototransistor detector in a low-profile LSOP package with creepage and clearance distances of ≥ 8 mm.