



The VOA300 AEC-Q102 Qualified Linear Optocoupler With a Single-Ended Output Offers Faster Response Times and Higher Isolation Voltage and Transfer Gain Stability, While Allowing Fast Data Transfer at 1.4 MHz to Ensure Passenger and Vehicle Safety

Product Benefits:

- Consists of an AlGaAs infrared LED (IRLED) irradiating an isolated feedback diode and an output PIN photodiode in a bifurcated arrangement
- AEC-Q102 qualified
- 5300 Vrms isolation voltage
- Fast response time
- Transfer gain stability of $\pm 0.005\ %/\text{°C}$ typical
- A single-ended output provides design flexibility
- Reliable and fast data transfers at the rate of 1.4 MHz
- Low input-output capacitance of 1 pF typical
- High gain linearity of $\pm 0.25\ %$
- Low power consumption of $< 15\ \text{mW}$
- RoHS-compliant, halogen-free, and Vishay Green



Market Applications:

- Galvanically isolated current and voltage measurement in electric vehicles (EV), including on-board chargers (OBC), traction inverters, and DC/DC converters

The News:

Vishay Intertechnology introduces the industry's first AEC-Q102 qualified linear optocoupler. Offering industry-high isolation voltage of 5300 Vrms, the Vishay Semiconductors VOA300 provides a response time that is five times faster than competing devices, while delivering increased transfer gain stability of $\pm 0.005\ %/\text{°C}$ typical and a single-ended output for design flexibility.

- The VOA300's feedback photodiode captures a percentage of the LED's flux and generates a control signal that is used to servo the LED drive current, while the output PIN photodiode produces an output signal that's linearly related to the servo optical flux created by the LED
- The time and temperature stability of the input-output coupler is ensured by using matched PIN photodiodes that accurately track the output flux of the LED
- The VOA300's single-ended output can be directly connected to an amplifier stage or an analog to digital converter
- The device's fast response time enables quick detection of voltage and current ripples for battery cut-off mechanisms (eFuses) that protect passengers and vehicles



The Key Specifications:

- Package: SMD-8
- Isolation voltage: 5300 Vrms
- Input-output capacitance: 1 pF typical
- Gain drift: 50 ppm/°C
- Non-linearity: 0.25 %
- Bandwidth: 1400 kHz
- Operating temperature range: -40 °C to +125 °C

Availability:

Samples and production quantities of the VOA300 are available now, with lead times of 10 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?80180> (VOA300)

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