



Toshiba announce new analog output IC photocoupler for automotive applications

New device delivers high-speed communications capability to the automotive environment

Düsseldorf, Germany, 5th July 2018 – Toshiba Electronics Europe (“Toshiba”) announces the launch of a new analog output IC photocoupler that enables high-speed communications in automotive applications – especially electric vehicles (EV) and hybrid electric vehicles (HEV).

The new TLX9309 consists of a high-output GaAlAs light emitting diode (LED) that is optically coupled to a high-speed detector. The detector consists of a photodiode and a transistor integrated onto a single chip. A Faraday shield has been integrated onto the photodetector chip to provide enhanced levels of common-mode transient immunity – typically up to 15kV/μs, an important parameter in electrically noisy automotive environments.

By separating the photodiode and amplification transistor, the collector capacitance is reduced, reducing propagation delays and making the open-collector TLX9309 faster than transistor output devices. In fact, propagation delay times are guaranteed to be between 0.1μs and 1.0μs, with the difference between high to low and low to high transition ($t_{pLH} - t_{pHL}$) being no more than 0.7μs, making the device suitable for high-speed communications such as inverter control or as an interface to intelligent power modules (IPM).

Electrically, the device offers 3750V_{rms} of isolation with 5.0mm of creepage and clearance for safety isolation. It operates from a supply in the range -0.5 to 30V DC and can drive up to 25mA at output voltages up to 20V. The current transfer ratio is in the range 15-300 %

The TLX9309 is packaged in a 3.7mm x 7.0mm x 2.2mm RoHS compliant 5-pin SO6 package and operates over the temperature range -40°C to +125°C. The device is AEC-Q101 qualified for use in automotive applications.

The TLX9309 is now in mass production.

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About Toshiba Electronics Europe

[Toshiba Electronics Europe GmbH](#) (TEE) is the European electronic components business of [Toshiba Electronic Devices and Storage Corporation](#). TEE offers European consumers and businesses a wide variety of innovative hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer and white goods applications. The company's broad portfolio encompasses integrated wireless ICs, power semiconductors, microcontrollers, optical semiconductors, ASICs, ASSPs and discrete devices ranging from diodes to logic ICs.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing design, manufacturing, marketing and sales. Company president is Mr. Tomoaki Kumagai

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