



## Toshiba releases automotive photorelay with high breakdown voltage of 900V

*Automotive-compliant TLX9150M is suitable for 400V battery-related control systems*

**Düsseldorf, Germany, 3rd December 2024** – Toshiba Electronics Europe GmbH (“Toshiba”) introduces a high-voltage transistor output photorelay for 400V automotive battery-related control systems. Housed in a compact SO12L-T package, the TLX9150M delivers a minimum breakdown voltage ( $V_{OFF}$ ) of 900V with a maximum reaction ( $T_{ON}/T_{OFF}$ ) time of 1ms. This is critical for control-sensitive applications such as battery and fuel-cell control and battery management systems (BMS) for monitoring voltages, and detecting mechanical relay sticking and ground faults.

The TLX9150M consists of an infrared (IR) emitting diode optically coupled to a photo-MOSFET, providing electrical isolation between the primary (control) side and the secondary (switch) side, enabling safe switch control across varying ground potentials. The trigger current ( $I_{FT}$ ) is more than 3mA, which minimises system energy consumption. In addition, this device’s off-state current ( $I_{OFF}$ ) is just 100nA (max) at ambient temperature, drawing minimal power while inactive. The IR LED has a forward current ( $I_F$ ) rating of 30mA, while its photodetection element has an on-state current ( $I_{ON}$ ) rating of 50mA at ambient.

In addition, the TLM9150M is housed in the new SO12L-T package with a space-saving form factor of 7.76mm × 10mm × 2.45mm, which is 25% smaller than Toshiba's existing package SO16L-T. This helps to miniaturise the battery unit and allows cost reduction. The pin pitch and pin layout of the two package sizes are the same, enabling a common circuit board pattern design. This normally-open (1-Form-A) device exhibits 8mm (min) creepage and clearance distances and 0.4mm (min) insulation thickness, confirming effective isolation even in operating temperatures ranging from -40° to +125°C, and is fully compliant with the AEC-Q101 and IEC 60664-1 standards.

For more information about the TLX9150M photorelay, please visit:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/photorelay-mosfet-output/detail.TLX9150M.html>

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### **About Toshiba Electronics Europe**

[Toshiba Electronics Europe GmbH](#) (TEE) offers European consumers and businesses a wide variety of hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer, and white goods applications. Next to HDDs, the company's broad portfolio encompasses power semiconductors and other discrete devices ranging from diodes to logic ICs, optical semiconductors as well as microcontrollers and application specific standard products (ASSPs) amongst others.

In addition, TEE also offers Toshiba's SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications and Silicon Nitride (SiN) ceramic substrates used in power semiconductor modules, inverters, and converters for their heat dissipation characteristics and strength.

TEE has its headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services.

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December 2024

Ref. 7568(A1)E