



### **Compact photorelay with high ON-state current and high-speed switching**

Long life, low power consumption, and silent operation for industrial equipment

**Düsseldorf, Germany, 30<sup>th</sup> January 2025** – Toshiba Electronics Europe GmbH (“Toshiba”) has introduced the TLP3640A photorelay for factory automation and other industrial applications, including building automation, security systems, and measuring instruments.

The silent, normally open TLP3640A replaces conventional 1-Form-A mechanical relays to improve system reliability and reduce power consumption. Housed in the 4-pin SO4 package measuring only 2.6mm x 7mm (typ.), the mounting area is reduced by 70% compared to mechanical relays and 30% compared to Toshiba’s TLP3122A device, contributing to application downsizing and reducing PCB cost.

The new photorelay is fabricated using Toshiba’s proprietary chip-on-chip technology (3D integration technology with vertical chip stacking) to deliver an off-state output terminal voltage ( $V_{OFF}$ ) of 60V (min.), a constant on-state current ( $I_{ON}$ ) of 1A (max.), and an on-state pulsed current ( $I_{ONP}$ ) of up to 3A. The on-state resistance ( $R_{ON}$ ) is 0.14 $\Omega$  (typ.), allowing highly efficient operation, while the off-state current ( $I_{OFF}$ ) is 1 $\mu$ A (max.).

By improving the characteristics of the internal LED and photodiode arrays, the new TLP3640A offers maximum switching times of 0.5ms ( $t_{ON}$ ) and 0.2ms ( $t_{OFF}$ ). These higher switching speeds make the new product suitable for analog interface sections in programmable logic controllers (PLCs) and gain-selectable amplifiers used in measuring instruments.

With a minimum isolation voltage ( $BV_S$ ) of 3750Vrms, the device is fully approved for UL1577 for safety-critical applications, as well as cUL-recognized and VDE-approved. In addition, compared to the existing TLP3122A device, which is rated for an operating

temperature of between -40°C and +85°C, the TLP3640A operates to +110°C (max.), improving the flexibility of the thermal design for the equipment.

For more information on the TLP3640A photorelay, please visit: <https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/photorelay-mosfet-output/detail.TLP3640A.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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