



New Toshiba high-speed photorelays improve semiconductor tester efficiency

Turn-on times are up to 62% shorter than previous models

Düsseldorf, Germany, 20th February 2025 – Toshiba Electronics Europe GmbH (“Toshiba”) has introduced two new photorelays that deliver significant improvements for semiconductor testing. The TLP3414S and TLP3431S photorelays offer high-speed turn-on times up to 62% shorter than their predecessors with no loss of performance. They also come in a compact package that is 20% smaller than before, saving PCB space.

These characteristics make the TLP3414S and TLP3431S ideal for pin electronics applications in semiconductor testers, which measure devices under test (DUT) with high accuracy and at high speed while switching signals.

TLP3414S and TLP3431S photorelays deliver high efficiency optical coupling thanks to improvements in infrared LED performance and design optimisation of the photodiode arrays. This allows a high-speed turn-on time of up to 150µs. Compared to previous models, the turn-on time of TLP3414S is 50% shorter and that of TLP3431S is approximately 62% shorter, representing significant performance improvements.

Quicker turn-on times have been achieved with no detriment to the device’s signal attenuation capabilities. ON-state resistance for the TLP3414S is 3Ω maximum and 1.2Ω maximum for TLP3431S. Output capacitance is typically 6.5pF for both models, which is crucial for reducing high-frequency signal leakage when the output is off. The OFF-state output terminal voltage rating and the ON-state current rating of TLP3414S are 40V/250mA and that of the TLP3431S is 20V/450mA.

The TLP3414S and TLP3431S use Toshiba’s latest S-VSON4T package, which measures just 1.45mm × 2.0mm × 1.3mm. This reduces the mounting area by approximately 20% compared with previous Toshiba packages and contributes to the miniaturisation of equipment.

Learn more about new photorelays on Toshiba's website:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/photorelay-mosfet-output/detail.TLP3431S.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.

Visit Toshiba's websites at www.toshiba.semicon-storage.com, www.scib.jp/en and www.toshiba-tmat.co.jp/en/ for further company and product information.

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