



Toshiba releases photocouplers for speed-challenged applications

New devices offer high performance for slow input signals and slow startup power supplies

Düsseldorf, Germany, 15th May 2024 – Toshiba Electronics Europe GmbH (“Toshiba”) announces the release of four photocouplers that address the issues caused by signals with slow signal rise and fall times as well as slow startup power supplies.

Photocouplers use light emitters and receivers along with a light-transmissive insulator to provide a high degree of electrical insulation in a small package. The applications are wide and varied although one of the most popular applications is in programmable logic controllers (PLC) that are essential to automating modern factories.

In order to operate correctly, photocouplers require input signals to conform to a minimum rise time to avoid undesirable switching at the output. The four new photocouplers (TLP2362B, TLP2368B, TLP2762B, TLP2768B) are compliant with IEC 61131-2 (Type 1) and provide hysteresis for the input forward current threshold as well as for the power supply circuit, making them suitable for use in high EMC noise environments.

Providing this hysteresis within the device ensures that the output will maintain its ‘high’ or ‘low’ state without additional switching. Built in hysteresis eliminates the need for external circuitry (such as Schmitt triggers) and reduces complexity and cost.

Demanding applications such as PLCs require photocouplers with data transmission rates that exceed the typical levels of a few Kbps. The four new photocouplers incorporate a high-gain, high-speed amplifier that allows the TLP2362B and TLP2762B to support 10Mbps and the TLP2368B and TLP2768B to support 20Mbps. This enables faster communication in end applications.

All devices can deliver an output current (I_o) of 25mA and can tolerate input rise and fall times for as long as 60s. Operation remains unaffected provided that the supply voltage (V_{CC}) is established within 60s.

The TLP2368B and TLP2768B achieve a propagation delay of less than 60ns. The TLP2362B and TLP2368B are housed in a 5-pin SO6 package measuring 3.7mm x 7.0mm x 2.3mm with an isolation voltage (BV_s) that exceeds 3750 Vrms. The TLP2762B and TLP2768B are housed in a SO6L package (3.84mm x 10.0mm x 2.3mm) and are rated for BV_s greater than 5000 Vrms.

All four of the new photocouplers are capable of operating at ambient temperatures as high as 125°C (and as low as -40°C), thereby ensuring that end applications such as PLCs are able to operate reliably in all conditions.

Mass production is now underway for all four of the new photocouplers.

Find out more on the Toshiba website:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.TLP2362B.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.TLP2368B.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.TLP2762B.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.TLP2768B.html>

###

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.

Contact details for publication:

Toshiba Electronics Europe GmbH, Hansaallee 181, D-40549 Düsseldorf, Germany

Tel: +49 (0) 211 5296 0

Web: www.toshiba.semicon-storage.com/eu/company/news.html

Contact details for editorial enquiries:

Michelle Shrimpton, Toshiba Electronics Europe GmbH

Tel: +44 (0)7464 493526

E-mail: MShrimpton@teu.toshiba.de

Issued by:

Birgit Schöniger, Publitek

Tel: +49 (0) 4181 968098-13

Web: www.publitek.com

E-mail: birgit.schoeniger@publitek.com

May 2024

Ref. 7518(A)E