



Toshiba introduces 32Gbps 2:1 multiplexer/1:2 demultiplexer switches for high-speed signals

1-lane 2-differential channel switches support PCIe® 5.0, USB4® and Thunderbolt™ 4 interfaces for connecting and expanding peripheral devices in PCs, server equipment, and mobile devices

Düsseldorf, Germany, 24th September 2024 – Toshiba Electronics Europe GmbH ("Toshiba") has launched two new high-speed differential channel multiplexer/demultiplexer (Mux/De-Mux) switches, the TDS4A212MX and TDS4B212MX, designed for signaling speeds of up to 32Gbps. Housed in a compact package, the devices support PCIe® 5.0, USB4® Ver.2, Thunderbolt™ 4 and DisplayPort™ 2.0 to connect and expand peripheral devices in applications such as PCs, server equipment, mobile devices and more.

The two new products offer a -3dB bandwidth (differential) of 26.2GHz or 27.5GHz (typ.) at a maximum DC current in active mode of 150µA, ensuring high signal integrity levels. Toshiba achieves these high-performance characteristics by adopting the company's original silicon-on-insulator complementary metal oxide semiconductor (SOI-CMOS) front-end process technology, called TaRFSOI™.

The differential signal operating range is 0 to 2.0V for common mode voltage and a 0 to 1.8V_{pp} for differential voltage swing, supporting a wide range of differential interface standards. In standby mode, the current consumption can be reduced to 10µA and below to conserve power consumption. The new devices can operate in ambient temperatures from -40°C to +85°C.

Housed in a tiny XQFN16 2.4mm x 1.6mm package with a 0.4mm profile, the two devices address the needs of engineers looking for PCB real-estate miniaturisation. The TDS4B212MX has an optimised pinout to achieve high-frequency performance, while the TDS4A212MX's pinout eases circuit board layout.

In addition to these two new high-performance devices for USB4[®], PCIe[®] Gen 4 and Thunderbolt™ 4, Toshiba has also increased the range available from Farnell for other high-speed bus switches. These would be suitable for USB[®] 2.0, PCIe[®] Gen1, also general purpose Input/Output (GPIO) in 5V and low voltage along with level shifting devices for I²C type interfaces. This gives design engineers a wide selection of bus switch and level shift options.

Read more about the TDS4A212MX and TDS4B212MX multiplexer/demultiplexer switches on Toshiba's website:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/general-purpose-logic-ics/detail.TDS4A212MX.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/general-purpose-logic-ics/detail.TDS4B212MX.html>

Shipments of both new devices start today.

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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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