



### **Toshiba's advanced digital isolators deliver high-speed multi-channel operation**

Aimed at protecting modern industrial systems new quad-channel magnetic coupling devices achieve industry-leading CMTI figures

**Düsseldorf, Germany, 9<sup>th</sup> May 2023** – Toshiba Electronics Europe GmbH (“Toshiba”) has just introduced its DCL54xx01 series of digital isolators for ensuring stable high-speed digital communications even in the toughest factory floor environments. The isolators serve to provide protection against the powerful voltage pulses that are endemic in the industrial work space, and can generate common mode transients across data line infrastructure. Members of the new quad-channel isolator series will block such destructive transients across data lines, exhibiting a common mode transient immunity (CMTI) of 100kV/μs (min.)<sup>[1]</sup> while supporting data transmission rates of up to 150Mbps.

To accommodate a wide variety of use cases, these devices also offer varied combinations of channel directions, output logic and enable controls. Four of them feature four forward channels, and the other two have three forward channels and one reverse channel. Of the four forward channel devices, two offer no enable control and the other two feature output enable. Both the devices with three forward channels and one reverse channel have an input disable function. For three of the devices the default output logic is low and for the other three it is high.

The new digital isolators are based on Toshiba's proprietary magnetic coupling type insulated transmission method, and will complement the company's devices using LED-based optical isolation technology. The members of the DCL54xx01 series feature a typical pulse width distortion of only 0.8ns<sup>[2]</sup> and a signal delay rated at 10.9ns. All six of these isolators feature a maximum withstanding isolation voltage of 5,000V for 1 minute. Acceptable power supply inputs for both  $V_{DD1}$  and  $V_{DD2}$  range from 2.25V to 5.5V. The devices are supplied in SOIC16-W packages, and can operate over a temperature range of -40°C to 110°C.

The new digital isolators are aimed at protecting industrial automation systems, such as programmable logic controllers (PLC) and I/O interfaces. Other uses include motor control applications and inverters.

Find out more about Toshiba's DCL54xx01 series of digital isolators from the following datasheets:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL540C01.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL540D01.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL540H01.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL540L01.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL541A01.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL541B01.html>

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#### Notes:

[1] Test condition:  $V_I = V_{DD}$  or  $0V$ ,  $V_{CM} = 1500V$ ,  $T_a = 25^\circ C$

[2] Test condition:  $V_{DD1} = V_{DD2} = 5V$ ,  $T_a = 25^\circ C$

#### **About Toshiba Electronics Europe**

[Toshiba Electronics Europe GmbH](#) (TEE) is the European electronic components business of [Devices and Storage Corporation](#). TEE offers European consumers and businesses a wide variety of innovative 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.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services. The company president is Mr. Tomoaki Kumagai.

For more company information visit TEE's website at [www.toshiba.semicon-storage.com](http://www.toshiba.semicon-storage.com).

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