



Toshiba introduces 40V eFuse ICs in small TSOP6F packages for power line circuit protection in industrial and consumer applications

Products integrate multi-function circuit protection to simplify design and improve efficiency

Düsseldorf, Germany, 12th February 2026 – Toshiba Electronics Europe GmbH (“Toshiba”) expands its electronic fuse (eFuse) lineup with the introduction of the 40V TCKE6 series. The five new products are the TCKE601RA, TCKE601RL, TCKE602RM, TCKE603RA, and TCKE603RL. The eFuse ICs are suitable for use in industrial equipment, such as robots and programmable logic controllers (PLCs), as well as consumer equipment, including robotic vacuum cleaners and copy machines.

The TCKE6 series is designed to perform multiple functions required for robust power line circuit protection. While the products provide short-circuit protection similar to standard physical fuses, such as glass tube fuses and chip current fuses, they also incorporate current-limiting and overvoltage protection. These enhanced features are crucial for protecting subsequent ICs in the circuit by preventing excessive current or voltage from being applied during overcurrent or overvoltage events. Furthermore, the eFuse ICs include a built-in thermal protection function that immediately shuts down the device if abnormal heat is detected or an unexpected short circuit occurs, also protecting the downstream circuit.

A key advantage of integrating these protection functions into a single eFuse IC is the simplification of circuit design. By reducing the need for multiple discrete components, the TCKE6 series enables more compact and efficient designs, resulting in fewer parts and a smaller footprint. The products are housed in a small TSOP6F package, typically measuring 2.9mm by 2.8mm, which helps reduce board size. The package height is typically 0.8mm, enabling thinner and more compact designs.

The TCKE6 series is rated at 40V and supports a wide input voltage range from 3.3V to 30V. This makes the products suitable for various power management applications, including 5V, 9V, 12V, and 24V systems. The low on-resistance (R_{ON}), which is typically

53mΩ at an output current (I_{OUT}) of 1A, minimises power dissipation during operation for optimum efficiency. The maximum R_{ON} is 90mΩ under these conditions. The rapid output short-circuit response time (t_{SHORT}) is typically 0.1μs at 25°C, which improves system reliability.

The TCKE6 series offers flexible operating modes tailored to the design requirements. The recovery operation type for the TCKE601RA and TCKE603RA is auto-retry, which allows the device to recover from faults automatically. The TCKE601RL and TCKE603RL are latched types that require an external signal for recovery. Designers can also select products featuring a FLAG function, which detects and reports abnormal conditions, or an enable (EN) function, which controls the eFuse IC's operation. For added flexibility, the TCKE602RM allows mode switching between auto-retry and latched types via external signals, eliminating the need for FLAG or EN functions.

Toshiba will continue to develop eFuse IC products and expand its lineup to meet diverse equipment requirements. For more information about the new eFuse IC introductions, please follow [this link](#).

###

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 offers SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications.

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 and www.scib.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, Pretzl Group Ltd.

Tel: +49 (0) 172 617 8431

Web: www.pretzl.com

E-mail: birgit.schoeniger@pretzl.com

February 2026

Ref. 7656(A)E