



Toshiba enhances range of 600V-rated IPDs for BLDC motor drive

Additional devices offer a compact through-hole option for designers

Düsseldorf, Germany, 07th November 2023 – Toshiba Electronics Europe GmbH (“Toshiba”) has extended its range of intelligent power devices (IPD) for brushless DC (BLDC) motor drive applications. The new devices are suited to use in pumps, air conditioning, ventilation, fans and other similar applications.

Complementing the recently launched TPD4163F and TPD4164F, the new products (TPD4163K and TPD4164K) use a HDIP30 through hole package measuring just 32.8mm x 13.5mm x 3.525mm. Through innovative design, this new package reduces the PCB mounting area by over 20%, when compared to Toshiba’s DIP26 products such as TPD4123x, TPD4144x, and TPD4135x. This contributes significantly to reducing the space required for motor drive circuit boards.

In common with the earlier releases, the new IPDs are based upon 600V-rated IGBTs and include a matched gate driver to deliver a complete, integrated solution in a compact package. The TPD4163K has a maximum DC current ($I_{OUT(max)}$) rating of 1A and the more capable TPD4164K is rated at 2A. IGBT saturation voltage (V_{CEsat}) of the devices is 2.6V and 3.0V respectively and the diode forward voltage (V_F) is 2.0V and 2.5V.

The maximum supply voltage rating ($V_{BB(max)}$) of both devices is now 600V which increases the design margin. This enhancement is particularly useful in locations where mains power is variable or subject to fluctuations.

To ease the task of designing brushless DC motor drives, Toshiba has announced a [reference design](#) that showcases the capabilities of the new TPD4164K and TMPM374FWUG microcontroller with vector control engine.

Toshiba will continue to expand its product portfolio with a range of device packages and enhanced performance characteristics. In doing so, they will contribute to customers' design flexibility and reduce carbon levels through energy-saving motor control.

The TPD4163K and TPD4164K are available for volume shipments from today and the reference design board is also fully available.

Visit Toshiba's website for more information about TPD4163F/64F and TPD4163K/64K IPDs:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/intelligent-power-ics/detail.TPD4163F.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/intelligent-power-ics/detail.TPD4164F.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/intelligent-power-ics/detail.TPD4163K.html>

<https://toshiba.semicon-storage.com/eu/semiconductor/product/intelligent-power-ics/detail.TPD4164K.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

November 2023

Ref. 7503(A1)E