

Toshiba Unveils New Smart Thin Package for Power MOSFETs With Industry's Smallest Mount Area Per MilliOhm of ON-Resistan

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First MOSFETs in Smart Thin Package Series Offer Increased Power Dissipation, Very Low ON-Resistance Construction to Improve Lithium Ion Battery Performance

Expanding innovative advanced packaging for its power semiconductor products, Toshiba America Electronic Components, Inc. (TAEC) today announced the availability of its **new ultra-thin Smart Thin Package (STP) surface mount package for power [MOSFETs](#)**. In addition, TAEC announced the introduction of the first MOSFET devices using STP technology, designated TPCT4201 and TPCT4202. To save critical printed circuit board space, the new package is only 0.60 millimeters (mm) in height and manufactured using Lead(Pb)-Free Finish(1) terminals, adding to Toshiba's growing portfolio of Lead(Pb)-Free(2) products.

Developed by Toshiba Corp. (Toshiba), the new STP packaging is the thinnest in its class and is 64 percent smaller than previous TSSOP-8 packaging. In addition, the STP MOSFETs carry the industry's smallest mount area per milliohm of ON-resistance ($R_{DS(ON)}$), which results in superior power efficiency in battery packs. The dual N-channel (Nch) TPCT4201 and TPCT4202 are particularly well-suited for lithium ion battery applications used in cellular phones, digital still cameras, camcorders, and other portable consumer electronics products, which

depend on small battery size, low power dissipation, and enhanced battery life to improve overall performance.

Toshiba's new STP MOSFETs feature a small footprint due to the small and thin packaging. Both devices carry a maximum power dissipation of 1.7 watts (W), a DC drain current (IS) of 6 amperes (A), a pulse drain current of 24A, a gate-source voltage of 12 volts (V), and low leakage current (ISSS) of just 10 microamps. For improved handling capability, both components include a built-in gate-source zener diode for electrostatic discharge (ESD) protection.

The TPCT4201 device offers low-drain source ON resistance (RSS(ON)) of 25.5 milliOhms and source-source voltage (VSSS) of 20V. The TPCT4202 device comes with low-drain source ON resistance (RSS(ON)) of 30.5 milliOhms and source-source voltage of 30V.

"Toshiba is committed to offering product designers and engineers advanced packaging technologies which simultaneously save space and deliver enhanced performance," said Brach Cox, business development manager for power devices in the discrete business unit at TAEC. "The new STP series of MOSFETs provides customers with higher power output in the industry's thinnest package, which also features Lead(Pb)-Free Finish."

Source: [Toshiba America Electronic Components, Inc.](https://www.toshiba-america.com/news/2004-07-toshiba-unveils-smart-thin-package.html)

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