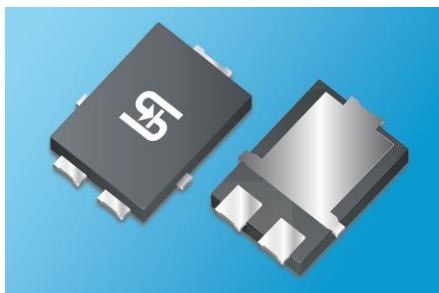


## TSC's New 600V FREDs Deliver Best-in-Class Efficiency and Improved Thermal Performance

*Taiwan Semiconductor's popular Fast Recovery Epitaxial Diode (FRED) product line now includes 600V devices in wettable flank, thermally advantageous SMPC4.6U packaging; Ultra-fast recovery yields higher efficiency; Higher voltage and current ratings expands range of applications.*

Brea, CA. — March 22, 2023 — [Taiwan Semiconductor](#), a global supplier of discrete power electronics



devices, LED drivers, analog ICs and ESD protection devices, announces the expansion of its line of Fast Recovery Epitaxial Diodes (FREDs). The new PUUPxJ Series are SMPC4.6U-packaged wettable flank devices providing best-in-class efficiency and power density. The series offers a maximum repetitive reverse-voltage ( $V_{RRM}$ ) rating of 600V with selectable device current ratings ( $I_F$ ) of [3A/600V](#), [6A/600V](#), [8A/600V](#), [10A/600V](#) and [12A/600V](#). Designed for a range of high-performance applications, the 600V FREDs exceed stringent AEC-Q100 automotive requirements for reliability and manufacturability.

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Applications for the PUUPxJ series include switching power supplies and power conversion, DC/DC converters, battery charging systems and off-line LED lighting power supplies, snubbers and freewheeling diodes. Key features include:

- **Fast Switching and Reverse-Recovery Times** – Planar FRED technology provides lower junction capacitance and faster  $t_{rr}$ .
- **Low Reverse Leakage** – Improves efficiency and offers a more controlled switching response between forward and reverse conduction modes.
- **Low Reverse-Recovery Charge** – Lowers parasitic ringing and EMC, reduces the need for snubbers; increases switching speed and lowers losses.
- **Wettable Flank SMPC4.6U (TO-227A) Package** – Ideal for automated placement, meeting automotive board mount testing and AEC-Q qualification testing. High yield manufacturability.
- **Excellent Thermal Performance** – Low-profile packaging with heat-spreader contacts provides excellent thermal management.
- **Global Materials Compliance** – RoHS compliant, halogen-free (per IEC-61249-2-21), WEEE, REACH, California Prop. 65, JESD-201 Class 2 Whisker Test and others.

“Our new 600V FRED devices deliver exceptional performance built upon Taiwan Semiconductor’s advanced topology and automotive-quality fabrication processes,” said Vice President, TSC Products, Sam Wang. “With the addition of the PUUPxJ series, TSC now offers the industry’s widest [portfolio of FRED devices](#) – all with competitive lead times.”

Design resources include comprehensive datasheets, 3D drawings, PCB layout footprint and spice models for each component in the series. AEC-Q100 qualification is in process.

### About Taiwan Semiconductor (TSC).

Recognized for more than 40 years for its core competence in discrete power rectifiers, Taiwan Semiconductor’s expanded product portfolio provides a complete solution from one source: including trench Schottky’s, MOSFETs, power transistors, LED driver ICs, analog ICs and ESD protection devices. A global enterprise with 2,000 over employees, TSC’s production facilities in China and Taiwan are fully compliant with current automotive and environmental standards such as IATF16949, ISO9001 and ISO14001. Taiwan Semiconductor products are used in a vast array of applications in the electronics industry including automotive, computer, consumer, industrial, telecom and photovoltaic. Through strategic expansion of innovative manufacturing capabilities and its focus on pioneering efficient semiconductor solutions, TSC is the right choice for a successful and lasting business relationship.

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