

Fast Recovery Epitaxial Diodes Support Higher Current Applications

[Taiwan Semiconductor](#)'s PUUPxxH family extends the benefits of the company's recently launched line of fast recovery epitaxial diodes to applications requiring up to 6 A of operating current. These high-reliability, AEC-Q101 qualified devices deliver optimized switching speed vs. reverse-recovery time. Their soft reverse recovery results in lower noise switching while achieving low losses and increased efficiency. The TO-227 package heat spreader contacts provide excellent heat transfer (see the figure).

In addition to the 100-V and 200-V rated 3-A, 4-A and 6-A models in the PUUP series, 3-A and 4-A versions are available in SOD-128 and DO-214 packages.

"The new PUUP series' FRED technology delivers increasing efficiency and power density in switching power applications in newer more thermally advantageous packaging," said vice president, TSC Products, Sam Wang. "And for instant upgrade to the benefits of this technology, 3-A and 4-A versions are also offered in historical packaging."

The new additions to the TSC FRED series provide several benefits such as fast switching and reverse recovery times; low reverse leakage with an industry-leading maximum I_R of 1 μ A at $T_j = 25^\circ\text{C}$, according to the vendor; and low reverse-recovery charge with a maximum Q_{RR} of 40 nC at $I_F = 0.5$ A, $I_R = 1.0$ A and $I_{RR} = 0.25$ A.

In addition, the TSC FRED series is RoHS compliant, halogen-free, and compliant with WEEE, REACH, California Prop. 65, JESD-201 Class 2 Whisker Test and other requirements. The diodes are offered in a thermally advantageous TO-227 package, which is suitable for automated placement.

Applications include switching power conversion in automotive, lighting, industrial and communications. Specific applications benefiting from the parts' AEC-Q qualification include fuel injection systems, electrification of transportation and automated navigation.

Unit pricing starts from \$0.40 in OEM quantities. Samples are in-stock at Digi-Key and Mouser. Design resources include comprehensive datasheets and Spice models for each component in the series. For more information, see the [website](#).

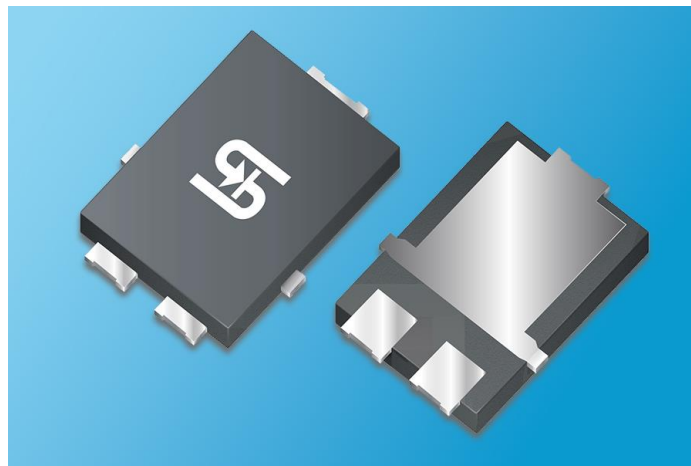


Figure. The FRED product line now includes 3-A, 4-A and 6-A models in low-profile TO-227A packages with heat-spreader contacts.