

## 1000-V Bridge Rectifiers Facilitate Compliance And Manufacturability

[Taiwan Semiconductor](#)'s RxBS family of glass-passivated 1000-V bridge rectifiers are miniature surface-mount devices that simplify compliance with global EMC requirements while lowering component count (see the figure). The devices' UL recognition can also aid in attaining safety certification for the end product. Offered in 2-A, 3-A and 4-A current ratings, these bridge rectifiers are designed for offline power conversion applications.

The RxBS series devices optimize reverse-recovery time with a tightly controlled  $T_{rr}$  of 300 ns max that reduces conducted emissions, making it easier to meet global EMC requirements. In addition, according to the vendor, these rectifiers offer the lowest forward voltage drop available with an industry-leading maximum  $V_f$  of 1.30 V at a  $T_j$  of 25°C and 1.16 V at a  $T_j$  of 125°C, improving efficiency and thermal performance.

These parts are UL-recognized (#E-326854) components, unlike most devices in this class according to the vendor. Meeting UL at the component level eases safety certifications of the end product. In terms of materials compliance, the RxBS series rectifiers are RoHS compliant, halogen-free (per IEC-61249-2-21), and meet WEEE, REACH, California Prop. 65 and other requirements.

Another feature of these devices is their small surface-mount package. This saves manufacturing assembly costs, in comparison with DIP packages, and increases power density based on lower thermal resistance, while enabling automated placement.

"Taiwan Semiconductor's very first products were bridge rectifiers and our decades of experience is evident in this new series," said vice president, TSC Products, Sam Wang. "The combined improvements of EMC performance and efficiency, component size and attention to global safety and materials compliance set a new standard for this class of rectifiers."

Applications for these devices include switch-mode power supplies, PoE Injectors, battery chargers, industrial equipment, TVs/monitors, offline LED applications and garage door openers.

Design resources include comprehensive datasheets and Spice models for each component in the series. In production quantities, unit pricing ranges from \$0.1185 to \$0.2962. Samples are in-stock at Digi-Key and Mouser and production quantities are also available. For more information, email [Kevin Parmenter](#), director, Applications Engineering at TSC America.

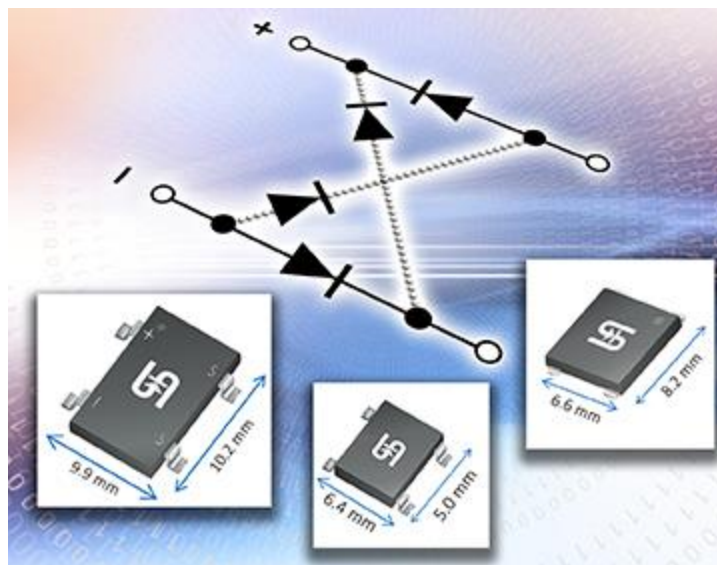


Figure. Offered in 2-A, 3-A and 4-A current ratings, the RxBS glass-passivated 1000-V bridge rectifiers feature an optimized reverse-recovery time with a tightly controlled  $T_{rr}$  of 300ns, max, reducing conducted emissions and making it easier to meet global EMC requirements.