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1200-V And 1600-V Rectifiers Meet Automotive And Industrial Requirements

Taiwan Semiconductor's HS1Q and SxY series of high-voltage rectifiers are manufactured to AEC-Q101 standards and offered in automotive- and commercial-grade versions. The fast-recovery HS1Q series (1200 V, 1 A, high-efficiency) and the standard-recovery SxY series (2 A, 1600 V and 1 A, 1600 V) rectifiers feature 175°C max junction temperature, high-voltage reverse recovery, low forward voltage drop and high surge current capability.

The rectifiers' DO-214AC (SMA) package is RoHS compliant and halogen-free. Production Part Approval Process (PPAP) documentation is available (see the figure).

As surface-mount parts produced to meet AEC-Q101 automotive-grade standards, the HS1Q and SxY series devices offer an intrinsically high-quality choice, says the vendor. They are well suited for bootstrap, freewheeling and desaturate applications for IGBT, MOSFET and WBG gate drivers used in electric vehicles and high-voltage battery systems. Other applications include alternative energy systems; grid-tied and smart grid systems; medical, industrial, UPS systems and plasma generators, and smart electric metering.

Design resources include comprehensive datasheets, SPICE models and CAD files (symbol, footprint, 3D model). For more information, see the HS1Q series and SxY series pages. Samples are in-stock from DigiKey and Mouser. Production quantities are available with a lead time of 8 to 14 weeks (ARO).

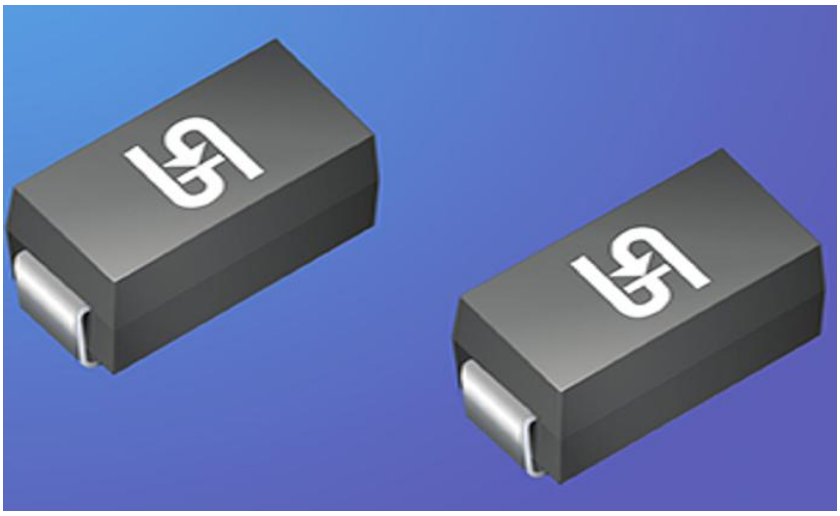

Figure. Commenting on the two high-voltage rectifier series, Sam Wang, vice president, TSC Products, said, "We are one of the few suppliers offering AEC-Q rectifiers with ratings above 1000 V that have a combination of low forward voltage—plus fast 75-ns reverse-recovery time. The rugged nature of their construction allows the new HS1Q and SxY series to withstand high inrush currents, which enhances reliability in automotive and non-automotive applications alike."