

Automotive-grade 600V 15 A to 60 A ultrafast diodes



These 600 V automotive-grade ultrafast rectifiers boost DC/DC converters thanks to its soft reverse recovery and low V_F

ST's new 'RQ' series of 600 V diodes feature a unique trade-off between a soft reverse recovery – to reduce EMI – and a low forward voltage.

Based on the correct LLC FB design, the STH15RQ06-Y, STH30RQ06-Y and the STH60RQ06-Y - respectively 15A, 30A, and 60A forward current rated - are tailored to improve the efficiency DC/DC conversion of direct current from one voltage level to another. Available in D2PAK surface-mount as well as TO-220AC and DO-247 through-hole packages, these ultrafast rectifiers are ideal for use in switched-mode power supplies and snubber circuits, or as free-wheeling diodes.

KEY FEATURES

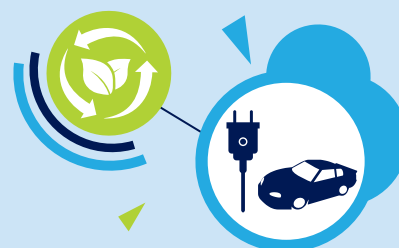
- Ultrafast recovery charges
- Soft recovery behavior
- Low leakage current
- V_{RRM} guaranteed from -40 to +175 °C
- AEC-Q101 qualified
- PPAP capable
- ECOPACK2 component

KEY BENEFITS

- Allows for use at higher switching frequencies
- Reduces reverse losses
- Limits EMI noise
- Provides high-quality performance
- Improves system reliability and efficiency

KEY APPLICATIONS

- AC-DC/DC-DC converters
- Inverters
- Switched-mode power supplies (SMPS)
- EV chargers
- On-board battery chargers
- EV/HEV charging stations
- Powertrains



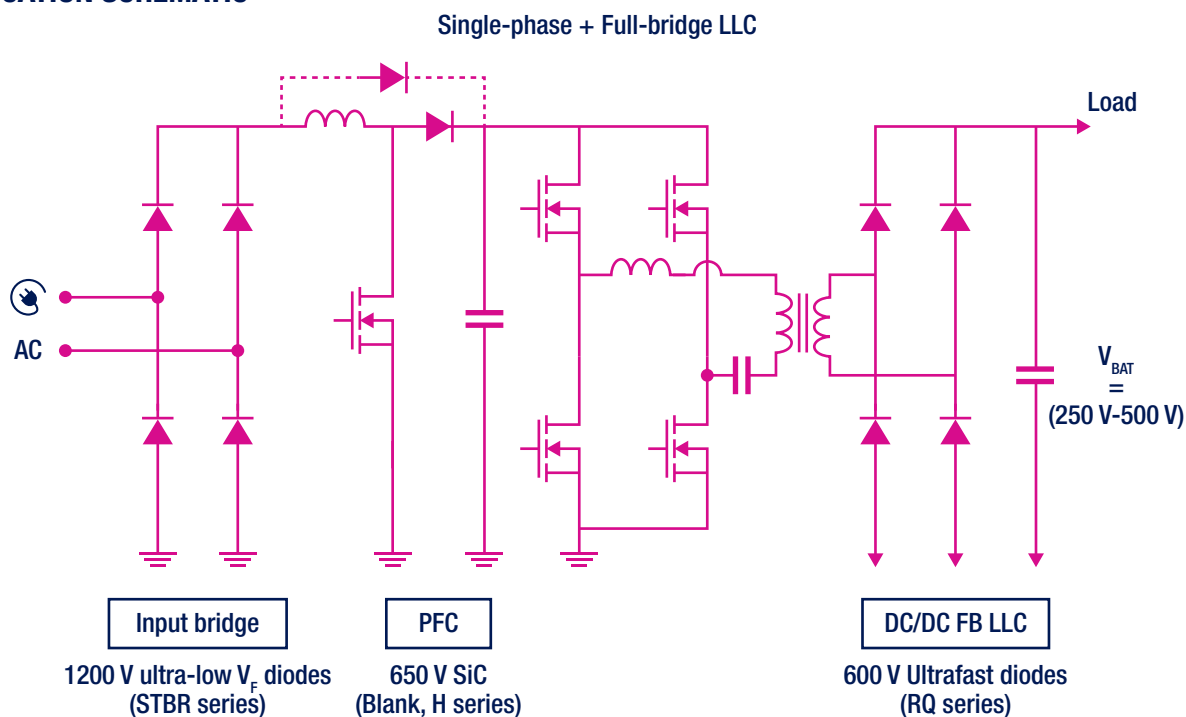
600 V AUTOMOTIVE-GRADE ULTRAFAST HIGH-VOLTAGE RECTIFIERS

The electrical parameters of the 600 V RQ series ensures that it is most suitable solution for high efficiency with an optimized V_F/Q_{RR} trade-off, covering a wide range of output voltages and currents.

In addition to being AEC-Q101 qualified, guaranteeing a V_{RRM} from 40 to +175 °C, its soft switching behavior results in good EMI during reverse recovery.

Designed for use in both automotive (DC/DC converters, OBC, powertrain), and industrial (SMPS, charging stations) solutions, these diodes provide high reliability to the system and improve its overall efficiency.

APPLICATION SCHEMATIC



Part number	Current rating $I_{F(AV)}$ (A)	Voltage rating V_{RRM} (V)	Packages
STTH15RQ06-Y*	15	600	D ² PAK**, DO-247, TO-220AC
STTH30RQ06-Y*	30	600	D ² PAK**, DO-247, TO-220AC
STTH60RQ06-Y*	60	600	DO-247

Note: * Industrial versions available without "Y" suffix

** : High voltage D2PAK HV version qualification planned in Q4 2018



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