

# AUTOMOTIVE-GRADE 600 V



## 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 and a low forward voltage. Based on the correct LLC FB design, the STTH15RQ06-Y, STTH30RQ06-Y and the STTH60RQ06-Y - respectively 15 A, 30 A, and 60 A forward current rated - are tailored to improve the efficiency DC/DC converters. Available in D<sup>2</sup>PAK surfacemount as well as TO-220AC, DO-247 and TO-247LL 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

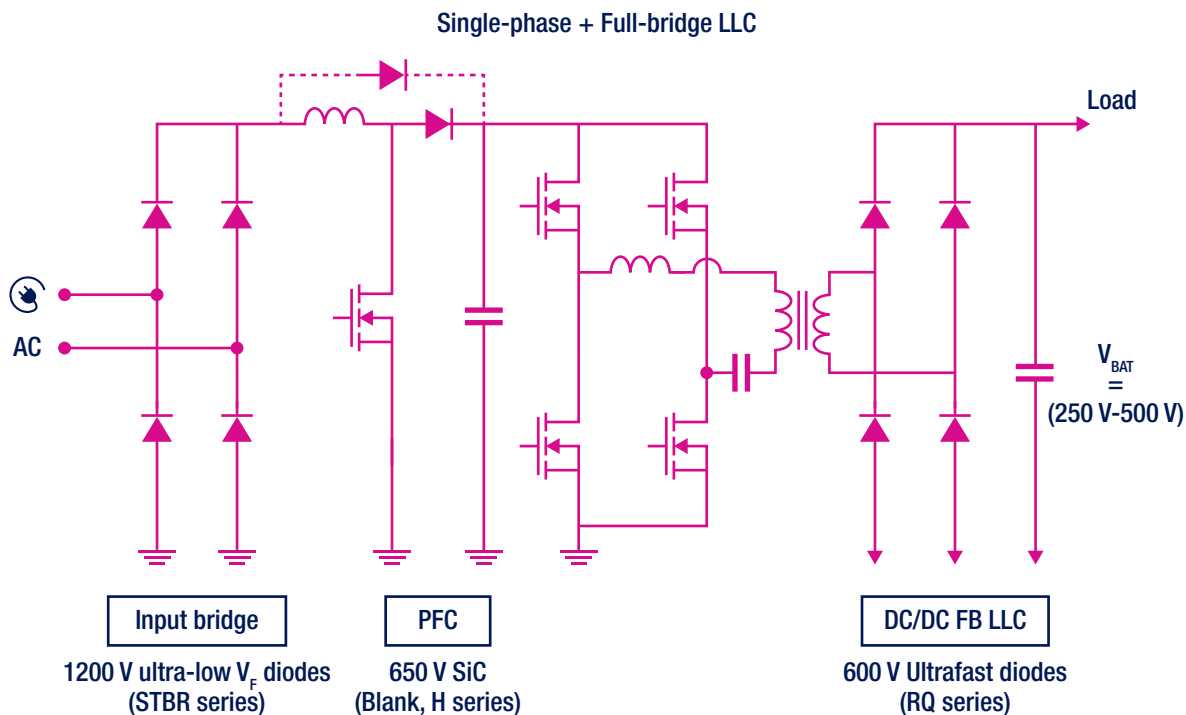
### 600 V Automotive-grade ultrafast high-voltage rectifiers

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
<b>STTH15RQ06-Y*</b>	15	600	D <sup>2</sup> PAK, DO-247, TO-220AC
<b>STTH30RQ06-Y*</b>	30	600	D <sup>2</sup> PAK, DO-247, TO-220AC, TO-247LL
<b>STTH60RQ06-Y*</b>	60	600	DO-247, TO-247LL

Note: \* Industrial versions available without "Y" suffix



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