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 STTH15RQ06-Y, STTH30RQ06-Y and the STTH60RQ06-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
- $V_{\text{fRM}}$ 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

These 600 V automotive-grade ultrafast rectifiers boost DC/DC converters thanks to its soft reverse recovery and low $V_F$.
600 V AUTOMOTIVE-GRADE ULTRAFAST HIGH-VOLTAGE RECTIFIERS

The electrical parameters of the 600 V RQ series ensure that it is the 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

![Application Schematic](image)

<table>
<thead>
<tr>
<th>Part number</th>
<th>Current rating ( I_{F} ) (A)</th>
<th>Voltage rating ( V_{RRM} ) (V)</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>STTH15RQ06-Y*</td>
<td>15</td>
<td>600</td>
<td>D²PAK**, DO-247, TO-220AC</td>
</tr>
<tr>
<td>STTH30RQ06-Y*</td>
<td>30</td>
<td>600</td>
<td>D²PAK**, DO-247, TO-220AC</td>
</tr>
<tr>
<td>STTH60RQ06-Y*</td>
<td>60</td>
<td>600</td>
<td>DO-247</td>
</tr>
</tbody>
</table>

Note: * Industrial versions available without "Y" suffix. ** High voltage D²PAK HV version qualification planned in Q4 2018.