Available in a DO-247, high power package, the STBR3012WY and STBR6012WY automotive-grade rectifiers are suitable for automotive input bridges in stationary and on-board battery chargers. Based on 1500 V technology, these 1200 V diodes offer superior performance in forward voltage drop (typical $V_f = 0.95$ V at $I_0$ / 150 °C), surge current handling and high-surge voltage withstanding capability ($V_{RSM} = 1500$ V). They make AC/DC converters safer by limiting the inrush current when combined with TN3050H-12WY or TN5050H-12WY thyristors.

**KEY FEATURES**
- Ultra-low forward voltage drop
- Ultra-low leakage current
- $V_{BRM}$ guaranteed from -40 to +175 °C
- $V_{RSM}$ guaranteed up to 1500 V
- AEC-Q101 qualified
- PPAP capable
- ECOPACK® 2 component

**KEY BENEFITS**
- Reduces conduction losses
- Reduces reverse losses
- Provides high-quality performance
- Limits inrush current when associated with SCRs

**KEY APPLICATIONS**
- Automotive input bridges
- On-board battery chargers
- Stationary battery chargers

**These 1200 V automotive-grade standard rectifiers make input Bridges more efficient thanks to its low forward voltage drop**
**STEVAL-ISF003V1 EVALUATION BOARD**

**Try STBR diodes in low standby losses power front-end with inrush current limitation**

The STEVAL-ISF003V1 evaluation board limits the inrush current charging a DC bus capacitor to comply with IEC 61000-3-3 standards. This inrush current limitation is based on a soft-start procedure of the mixed bridge with STBR6012WY diodes and SCR rectifiers using progressive phase control at board start-up.

This solution drastically reduces standby losses as the DC bus can be totally disconnected from the AC mains when it does not have to operate. DC bus deactivation is simply achieved by turning off the SCRs, without requiring an additional relay to open the circuit in standby.

The steady-state losses are also reduced, thanks to the removal of the NTC / PTC resistor traditionally used to limit the inrush current, which in turn removes the need for a relay to bypass it.

**PRODUCT PORTFOLIO OFFER**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Current rating (A)</th>
<th>Voltage rating (V)</th>
<th>Packages</th>
<th>Associated SCR for mixed input bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>STBR3012WY</td>
<td>30</td>
<td>1200</td>
<td>DO-247</td>
<td>TN3050H-12WY</td>
</tr>
<tr>
<td>STBR6012WY</td>
<td>60</td>
<td>1200</td>
<td>DO-247</td>
<td>TN5050H-12WY</td>
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