

Automotive compliant Super Barrier Rectifier (SBR) provides supply line protection

The SBR20M150D1Q is an automotive-compliant super barrier rectifier (SBR[®]) diode employing patented and proprietary technology to significantly reduce power loss and improve robustness in automotive applications.

The SBR20M150D1Q (20A, 150V) features low forward voltage drop (max. 0.9V), and is avalanche rated. Critical to sensitive automotive systems, such as ECU's BCM's and infotainment, these combined features provide for low complexity, reverse polarity protection designs with high resilience to transient voltages.

Conforming to ISO7637-2* the SBR20M150D1Q provides a robust solution to protect against electrical disturbances found in both 12V and 24V automotive supply lines.

**Tested according to INTERNATIONAL STANDARD ISO7637-2 third edition: pulses 1, 2a, 3a and 3b for 24V systems.*

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The Diodes Advantage

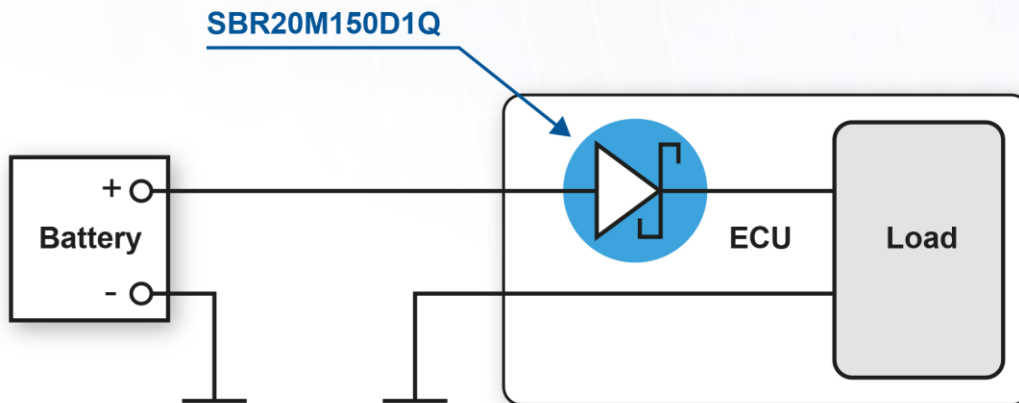
- **Low voltage drop (V_f)**
 - Minimizes power losses thereby increasing power efficiency
- **Low Reverse Leakage (I_R)**
 - Reverse protection performance maintained at high temperature
- **Avalanche Rated**
 - Robust transient energy suppression performance
- **Automotive Compliant**
 - Qualified to AECQ-101
 - PPAP Capable
 - Manufactured in IATF16949:2016 certified facilities

Applications

- Reverse Polarity Protection
- DC-DC Converter
- Switching Diode
- Blocking Diode
- Recirculating Diode



Typical Application Schematic



Reverse Protection - The simplest solution to providing reverse polarity protection (e.g., from an incorrect battery connection) is the series diode shown above. The diode will block the current in a reverse supply situation, protecting the load from damage.

Summary

Ratings @TA = 25°C, unless otherwise specified.

Part Name	Package	Peak Repetitive Reverse Voltage V_{RRM} (V)	Average Rectified Output Current I_o (A)	Maximum Forward Voltage Drop V_F (V)	Maximum Reverse Current I_R @25°C / @125°C	Typical Switching Speed t_{RR} (ns)	Tested to ISO7637-2*
SBR20M150D1Q	TO252 (DPAK)	150	20	0.9	50µA / 10mA	24	Y

*Tested according to INTERNATIONAL STANDARD ISO7637-2 third edition: pulses 1, 2a, 3a and 3b for 24V systems.

Ordering Information

Part Number	Package	Quantity
SBR20M150D1Q-13	TO252 (DPAK)	2,500 Pieces/Reel

To find out more information: <https://www.diodes.com/part/SBR20M150D1Q>

Application note: <https://www.diodes.com/assets/App-Note-Files/AN1158-SBR-transient-protection-to-ISO-7637.pdf>