



# New Product Announcement

SBR10M100P5Q  
SBR8M100P5Q

## Automotive Super Barrier Rectifier Improves Efficiency and Reliability for Any Design

These automotive-compliant super barrier rectifier (SBR<sup>®</sup>) diodes employ patented and proprietary technology and can significantly reduce power loss and lower operating temperatures in automotive applications.

The SBR10M100P5Q (10A, 100V) and SBR8M100P5Q (8A, 100V) feature low forward voltage drop (0.88V), ultra-low reverse leakage (2 $\mu$ A), and fast switching speeds (16ns)\*. Combined, these features can reduce system efficiency losses up to 30% compared to Schottky barrier diode technology and reduce energy consumption and running costs.

Generating less heat reduces the cost of cooling components and provides a more reliable end product.

SBR technology is a drop-in replacement for existing Schottky diodes; it can deliver immediate benefits without any costly redesign effort and reduces time-to-market for existing systems that must meet more stringent limits.

\*18ns for SBR10M100

*SBR is a registered trademark of  
Diodes Incorporated.*



### The Diodes Advantage

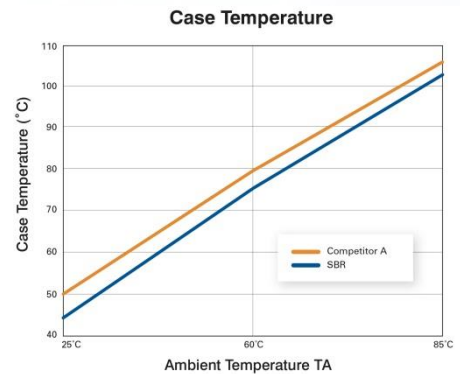
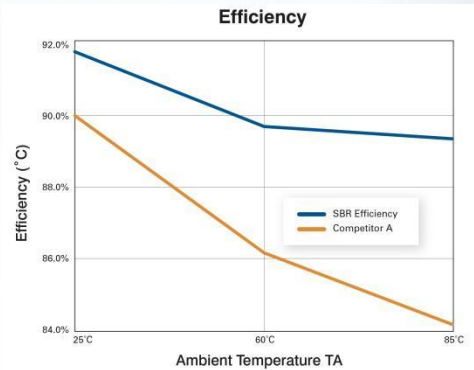
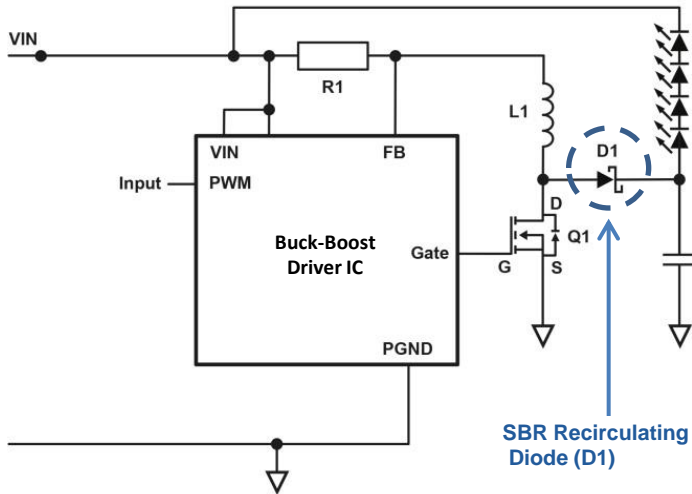
- **Superior Power Efficiency Gains up to 5%**
  - Proprietary and patented MOS technology provides improved efficiency compared to Schottky diodes
  - More energy is conserved thereby reducing running costs
- **Lower Case Temperature up to +5°C**
  - Improves reliability
  - Reduces BoM costs for cooling components
- **Drop-In Compatibility with Schottky Diodes**
  - Existing Schottky circuit designs are easily switched to SBR
  - Reduces time-to-market with immediate benefits

### Circuit Functions

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



### Typical Application Schematic – Buck-Boost Converter for DRL



### Application Information

The efficiency and case temperatures of the SBR10M100P5Q were compared with a leading competitor, 10A planar Schottky diode, in a typical buck-boost converter circuit driving DRL LEDs. Tested over a range of voltages and ambient temperatures, the SBR maintained up to 5% better efficiency than the Schottky competitor and showed a consistently cooler case temperature up to +5°C.

### Product Portfolio

Part Name	Package	Peak Repetitive Reverse Voltage $V_{RRM}$ (V)	Average Rectified Current $I_o$ (A)	Forward Voltage Drop $V_F$ (V)	Maximum Reverse Current $I_R$ ( $\mu$ A)	Switching Speed $t_{RR}$ (ns)
SBR10M100P5Q	PowerDI5	100	10	0.88	2	18
SBR8M100P5Q	PowerDI5	100	8	0.88	2	16

### Ordering Information

Part Number	Quantity	Reel Size	Tape Width
SBR10M100P5Q-13	5000	13 inches	16mm
SBR10M100P5Q-13D	5000	13 inches	12mm
SBR8M100P5Q-13	5000	13 inches	16mm
SBR8M100P5Q-13D	5000	13 inches	12mm

For more information:

SBR10M100P5Q: <https://www.diodes.com/part/SBR10M100P5Q>  
SBR8M100P5Q: <https://www.diodes.com/part/SBR8M100P5Q>

Application Note: <https://www.diodes.com/assets/App-Note-Files/AN1149.pdf>