

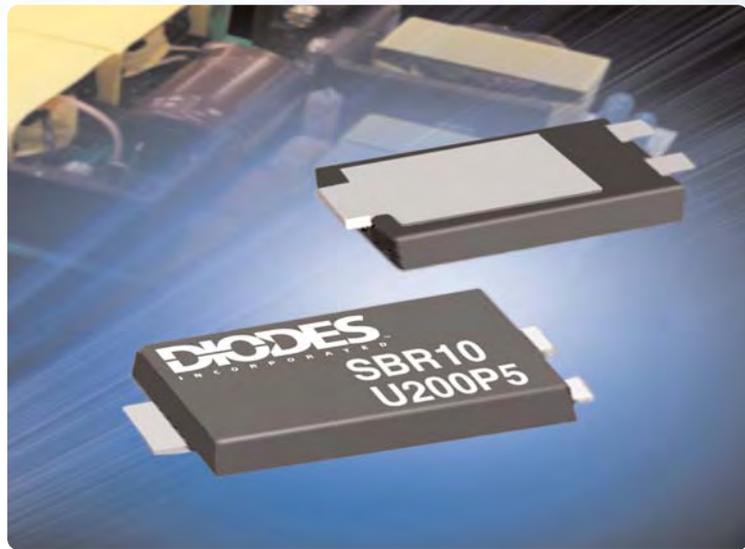
High voltage SBR[®] rectifier reduces footprint and increases power density in power supply applications

Description

Diodes Incorporated has introduced two new high voltage Super Barrier Rectifier (SBR[®]) packaged in the thermally efficient, compact powerDI[®]5 package. The superior thermal resistance of the proprietary powerDI[®]5 package enables the SBR10U200P5 and SBR8U60P5 to deliver twice the power density, from a PCB footprint that is 40% smaller than the industry standard TO252.

The SBR10U200P5 is the industry's smallest leaded 10A rectifier rated at 200V, it delivers an industry leading V_F of 0.7V. Similarly, the SBR8U60P5 has a V_F of 0.45V at 8A. Both these are rated at ambient temperature T_A of 125°C.

Coupled with an off board height of just 1.1mm – half that of the industry standard TO252 – the SBR10U200P5 and SB8U60P5 enable designers to reduce the form factor of end applications such as Notebook power adapters, universal chargers and telecom power supplies.



The Diodes advantage

- **Thermally efficient compact package**
With a thermal resistance of typically 1.5°C/W the powerDI[®]5 package delivers twice the power density from a footprint that is 40% smaller than TO252.
- **Low profile package**
With an off board package profile of 1.1mm - half that of the industry standard TO252 – the powerDI[®]5 package facilitates the design of lower profile end applications.
- **Ultra low forward voltage (V_F)**
Reduces power loss and enables the design of more efficient end applications.
- **175°C rated junction temperature**
The SBR10U200P5 can operate with T_J of 175°C providing a higher operating margin and making it ideal for high reliability applications.
- **Superior avalanche rating**
With an avalanche rating 50% greater than equivalent schottky diodes the SBR allows the removal of snubber circuits, this simplifying and reducing the cost of end designs.
- **High forward current rating (I_{FSM})**
A high forward surge current rating protects against large current surges and lightning strikes.

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New Ultra-Low V_F SBR PowerDI[®]5 Product Family

Part No	Description	Package	Max T_J (°C)	Forward Voltage V_F typical (V) $I_F = 8A, T_A = 125^\circ C$	Reverse Current I_R typical (mA) $V_R = 60V, T_A = 125^\circ C$	Production Lead Time for 100k units
SBR8U60P5	8 A / 60 V Ultra-Low V_F SBR	PowerDI [®] 5	150	0.45	20.0	10-12 wks
SBR10U200P5	10 A / 200 V Ultra-Low V_F SBR	PowerDI [®] 5	175	0.70	0.18	10-12 wks

Circuit functions
Output diode
Boost diode
Freewheeling diode

Applications
AC/DC power supplies
DC/DC converters
DC/AC inverters

