Issue Number | 002
June 2017

New Product Announcement

Miniature Bridge Rectifiers

Miniature Surface-Mountable High-Voltage Bridge Rectifiers for LED Lights and AC-DC Chargers/Adapters

Diodes Incorporated announces the introduction of several new glass passivated bridge rectifier series. These devices are assembled in small form-factor and surface-mountable packages: MBS, MBF, ABS. These miniature bridge rectifiers feature a small footprint, up to 50% smaller than the space consumed by either one through-hole in-line bridges or four discrete rectifiers. This enables the end products like LED light bulbs and AC-DC chargers / adapters to be smaller and lighter.

These bridge rectifiers offer high reverse breakdown voltage (V_{RRM}) up to1kV and high forward current surge capability (I_{FSM}) up to 60A. Their low V_F and I_R characteristics result in very good power efficiency. Coupled with the glass passivated construction, these devices exhibit strong robustness and high reliability which are important to the AC-DC power modules inside the LED lights and power chargers / adaptors.

These new devices are ideally suited for the modern, high-speed automated printed circuit board (pcb) assembly processes. The MBS, MBF, and ABS packages are green and RoHS-compliant (See diodes.com for further details).

The Diodes Advantage

- **Miniature Bridge Packages Save Space on PCB**

  The small form-factor of the MBS, MBF, and ABS packages take up 50% less board space than four individual rectifiers (in SMA package) connected in the bridge configuration.

- **Low Reverse Leakage Current & High Reverse Breakdown Voltage**

  These devices exhibit low reverse leakage current (I_R) down to 5µA and high reverse breakdown voltage (V_R) at up to 1kV, which ensure high-power efficiency during the reverse and switched modes of operation.

- **High Forward Surge Current Capability**

  Their internal clip-bonded structure enables these devices to withstand high surge current (I_{FSM}) up to 60A, resulting in high reliability and long product lifetime.

- **Optimized for LED Lights & AC/DC Power Chargers / Adaptors**

  These devices are cost-effective to end products, like LED lights and AC-DC chargers / adaptors, in which tight application space and low system cost are paramount.

Circuit Functions

- AC-DC Rectification
- Reverse-polarity Protection

Target Markets

- SMPS for PC and Servers
- LED Lights
- AC-DC Chargers / Adaptors
- FPTV & PC Monitor Power Boards
- Power-over-Ethernet (PoE)

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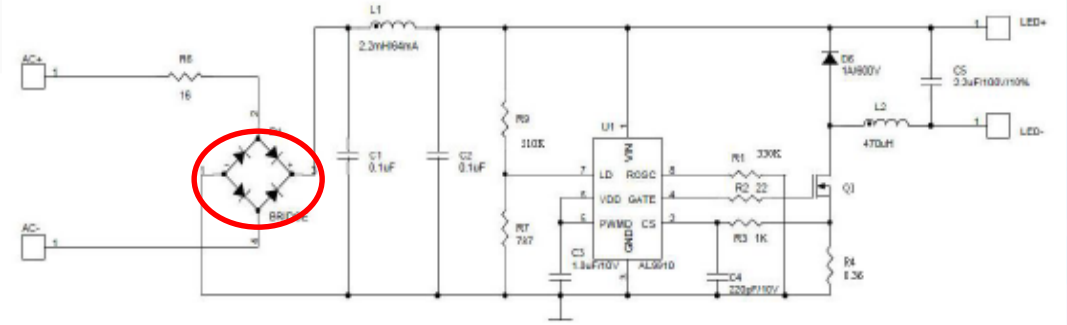
Typical Application Schematic (AC/DC Rectification in LED Lights)



Product Portfolio

Part Number	Package	Max Average Rectified Current I_O (A)	Peak Repetitive Reverse Voltage V_{RRM} (V)	Maximum Forward Voltage Drop V_F (V)	Maximum Reverse Current I_R (µA)	Maximum Peak Forward Surge Current I_{FSM} (A)	Typical Total Capacitance C_T (pF)	Maximum Power Dissipation, P_D (W)
MB10F-13	MBF	0.8	1,000	1.1	5.0	30	7	1
MB10S-13	MBS	0.8	1,000	1.1	5.0	30	8	1
ABS210-13	ABS	2	1,000	1.1	5.0	60	17	2.2
ABS10B-13	ABS	1.5	1,000	1.1	5.0	50	17	1.7
ABS10A-13	ABS	1	1,000	1.1	5.0	35	9	1.1

Cross Reference

Part Number	Cross References
MB10F-13	Panjit: [MB10F-08]
MB10S-13	ON Semi (Fairchild), Vishay, Comchip, Taiwan Semi, MCC, LRC: [MB10S, MB6S, B10S-G, MBS10, MB10S-TP, B10S]
ABS210/ABS10B/ABS10A	ON Semi (Fairchild), Taiwan Semi, Panjit, Comchip: [MDB10S, ABS20M, TB10F, ABS10-HF]