

Synchronous Rectifier Controller reduces PSU losses for improved efficiency

With ever increasing demands to improve the efficiency of power supplies, new techniques and circuit topologies are evolving.

One of the major developments is to replace the lossy Rectifier diodes and the associated bulky heat sinks with much more efficient MOSFET switches and controllers.

The ZXGD3101 has been introduced with this specific operation in mind and controls the MOSFET to achieve 2.5-3% efficiency improvement over rectifier diode solutions.

Proportional Gate drive is adopted to ensure there is no premature turn-off of the MOSFET and also keeping switching times to a minimum.

The 180V rating ensures that the controller will withstand the transient voltages often experienced on the Drain pin of the synchronous MOSFET negating the need for additional protection circuitry.

The data sheet, supporting application notes, calculators and design guides can be downloaded from [www.diodes.com / products / catalog / detail.php?item-id=4948](http://www.diodes.com/products/catalog/detail.php?item-id=4948)

For samples and quotations please contact your nearest Diodes sales office or representative.

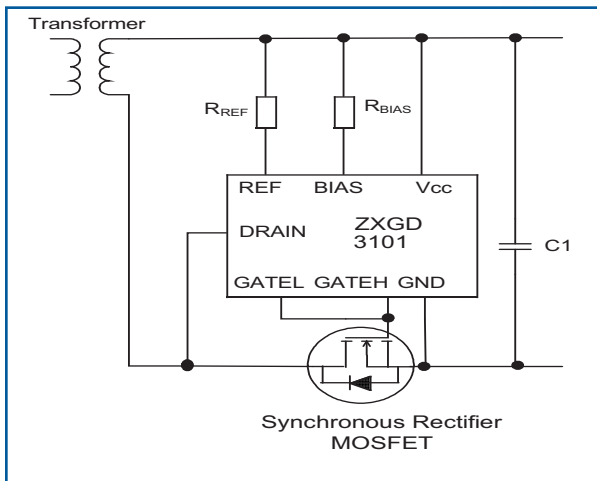


The Diodes advantage

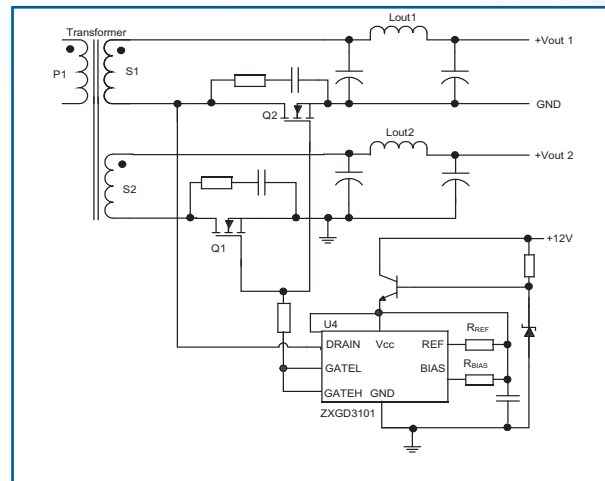
- Turn-off propagation delay 15ns and turn-off time 20ns**
 Prevents reverse conduction and minimises shoot through ensuring high efficiency operation
- Proportional Gate Drive**
 Optimum turn-off performance
- 180 Volt sensing input**
 Can be connected directly to the MOSFET Drain pin without the need for external protection components
- Suitable for Discontinuous Mode (DCM); Critical Conduction (CrCM) and Continuous Mode (CCM) operation**
 Flexible for use in Flyback, Forward and Resonant converter topologies

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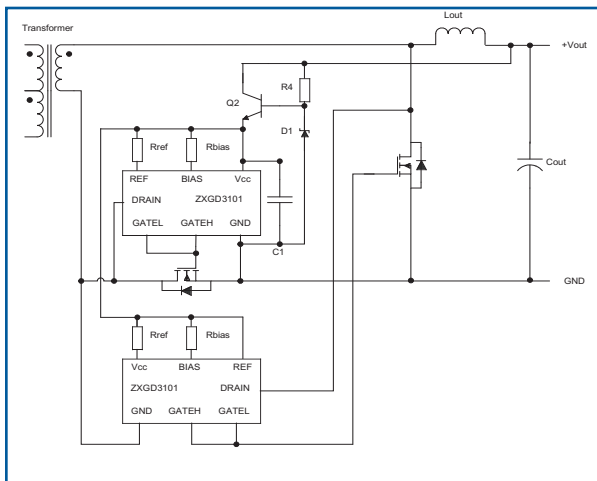
Outline Circuit



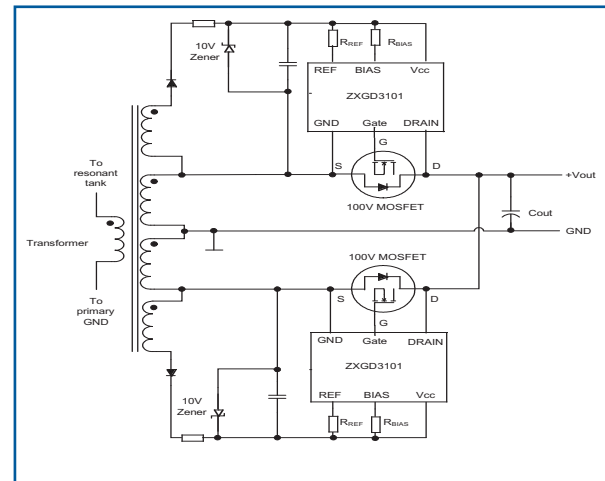
Flyback Converter (Application notes AN54 and AN70)



Multiple Output Flyback Converter (Design notes DN90 and DN91)



Forward Converter



LLC Converter (Application note AN69)

Typical application areas

- AC/DC adapters
- Desktop PSU
- LCD TV PSU

- Auxillary supply in:
 - Server PSU
 - Solar panel inverter
- Battery chargers

- LCD monitor PSU
- Open frame PSU