



## ZXGD3103N8

# New Synchronous Rectifier Controller further improves power supply efficiency

With the drive to save power gaining momentum, synchronous rectification is being adopted into more and more power supply designs. Replacing the secondary side rectifier diodes with low on-resistance MOSFETs can cut the rectifier losses by 60~70% giving an overall efficiency saving of up to 3.5%.

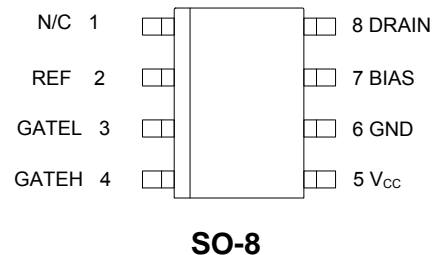
The ZXGD3103N8 has been designed to control and switch the MOSFET to provide optimum performance, thereby minimising the switching and on state losses to improve the overall power supply efficiency.

Proportional Gate drive is the main differentiator when compared to competing solutions. By backing off the voltage applied to the MOSFET Gate as the Drain current falls ensures that the detector does not turn off the MOSFET too early in the cycle resulting in lost efficiency.

Competing solutions use direct drive which means the MOSFET is kept fully enhanced often resulting in the detector threshold being reached before the on cycle is complete.

The other advantage of the Proportional Gate Drive is that at the point when the MOSFET is required to turn-off the current, there is less Gate charge to overcome than if the MOSFET was still fully enhanced ensuring faster turn-off to minimize shoot through and body diode conduction.

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



## The Diodes' Advantage

- **Proportional Gate Drive**  
Prevents premature turn-off of the synchronous MOSFET giving optimum performance
- **Turn-off propagation delay and fall times of 15 and 21ns respectively**  
Prevents reverse conduction and minimises shoot through current ensuring high efficiency operation
- **Turn-on propagation delay of 150ns**  
Reduces body diode conduction in the synchronous MOSFET, reducing losses. Suitable for power supplies switching up to 300kHz
- **Operating voltage range 5 to 15V**  
Adaptable in various supply configuration
- **180V sensing input**  
Permits direct connection to the MOSFET Drain without the need for external protection components



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Applications	Circuit Topologies
<ul style="list-style-type: none"> <li>• Low power adapters</li> <li>• Set Top Box</li> <li>• LCD TV</li> <li>• Auxiliary supplies</li> </ul>	<p style="text-align: center;"><b>Flyback Converter</b></p>
<ul style="list-style-type: none"> <li>• High Power Adapters</li> <li>• Street Lighting</li> <li>• Servers</li> <li>• ATX</li> </ul>	<p style="text-align: center;"><b>LLC Converter</b></p>
<ul style="list-style-type: none"> <li>• Set Top box</li> </ul>	<p style="text-align: center;"><b>Multiple Output Flyback Converter</b></p>