

Product Brief

BSZ0909ND OptiMOS™ half-bridge

Infineon's optimized solution for wireless power and drives

The used OptiMOS™ technology combined with the PQFN 3.0 x 3.0 mm² package offers an optimized solution for DC-DC applications with space critical requirements.

The BSZ0909ND fits perfectly in wireless charging and drives (e.g. multicopter, wearables) architectures where designers target to simplify the layout and significantly save space without compromising on efficiency.

Especially in MHz switching implementations like the resonant AirFuel standard, the BSZ0909ND is the leading product in the industry and in its performance on par with current GaN FET solutions on the market. It has an optimized figure-of-merit for gate charge times $R_{DS(on)} (Q_G * R_{DS(on)})$ to work most efficiently in a class D inverter switching at 6.78 MHz and excels due to its ultra-low parasitics.

Key features

- > Ultra-low Q_G
- > Symmetric half-bridge in a small 3.0 x 3.0 mm² package outline
- > Exposed pads
- > Logic level (4.5 V rated)
- > RoHS compliant 6/6 (full lead free)

Key benefits

- > Low switching losses
- > High switching frequency operation
- > Lowest parasitics
- > Low operating temperature
- > Low gate drive losses
- > RoHS 6/6 lead free product



Resonant AirFuel (A4WP) full system board:

Input voltage = 20 V
Output power = 14 W
Switching frequency = 6.78 MHz
Efficiency = 80%

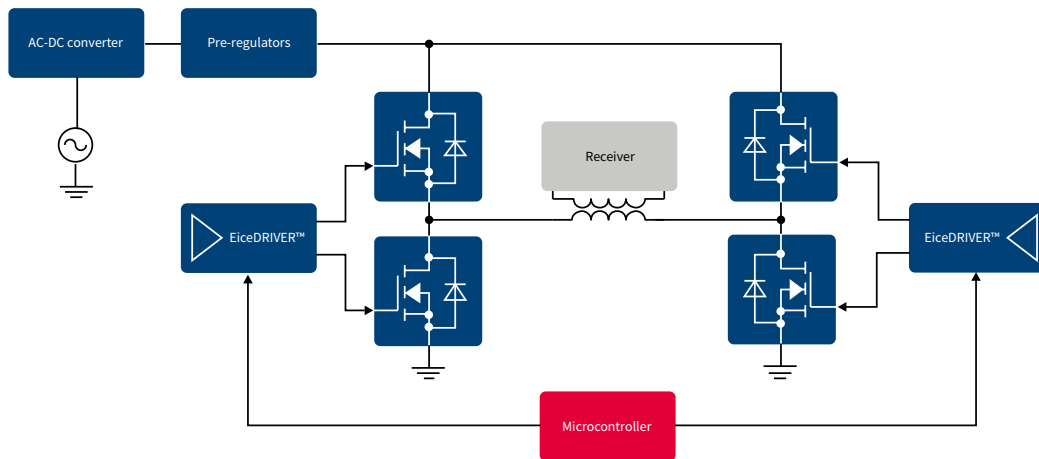
**BSZ0909ND temperature is 61.3°C with
a switching frequency of 6.78 MHz**



BSZ0909ND OptiMOS™ half-bridge

Infineon's optimized solution for wireless power and drives

Resonant AirFuel Class D solution



Please note:

- > Class D full-bridge topology shown here
- > Product also suitable for class D half-bridge topology

> The Resonant AirFuel (A4WP) standard is one of the leading wireless charging standards and follows the principle of magnetic resonance using a high frequency of 6.78 MHz

> The BSZ0909ND is a leading product in the industry when it comes to fast switching because it has an optimized figure-of-merit for gate charge times $R_{DS(on)} (Q_G * R_{DS(on)})$ to achieve 6.78 MHz switching frequency

Product portfolio

Sales name	Package	$R_{DS(on)}$ (max.) @ $V_{GS} = 4.5\text{ V}$ [mΩ]	$R_{DS(on)}$ (max.) @ $V_{GS} = 10\text{ V}$ [mΩ]	Q_G (typ.) @ $V_{GS} = 4.5\text{ V}$ [nC]	C_{oss} (typ.) @ $V_{GS} = 15\text{ V}$ [pF]	$R_{th(ja)}$ [°C/W]
BSZ0909ND	WISON-8	25	18	1.8	88	65

Published by
Infineon Technologies Austria AG
9500 Villach, Austria

© 2017 Infineon Technologies AG.
All Rights Reserved.

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.