

OptiMOS™ 5 40V and 60V

Shrink Your Design and Boost Efficiency

OptiMOS™ 5 40V and 60V, Infineon's latest generation of power MOSFETs, is optimized for Synchronous Rectification in switched mode power supplies (SMPS) such as those found in servers and desktops. In addition these devices are a perfect choice for a broad range of industrial applications including Motor Control, Telecom, Solar micro inverter and fast switching DC/DC converter.

OptiMOS™ 5 40V and 60V product families, feature not only the industry's lowest $R_{DS(on)}$ but also a perfect switching behavior for fast switching applications. 15% lower $R_{DS(on)}$ and 31% lower Figure of Merit ($R_{DS(on)} \times Q_g$) compared to alternative devices has been realized by advanced thin wafer technology.

The fast growing market of solar micro inverter requires ever higher performance levels of components. In typical photovoltaic topologies both $R_{DS(on)}$ and switching characteristics are equally important. In a micro inverter 1.5% higher efficiency can be achieved at a 20% load condition by using BSC016N06NS (1.6mΩ Super S08 - 5x6mm² 60V device).

Key Features

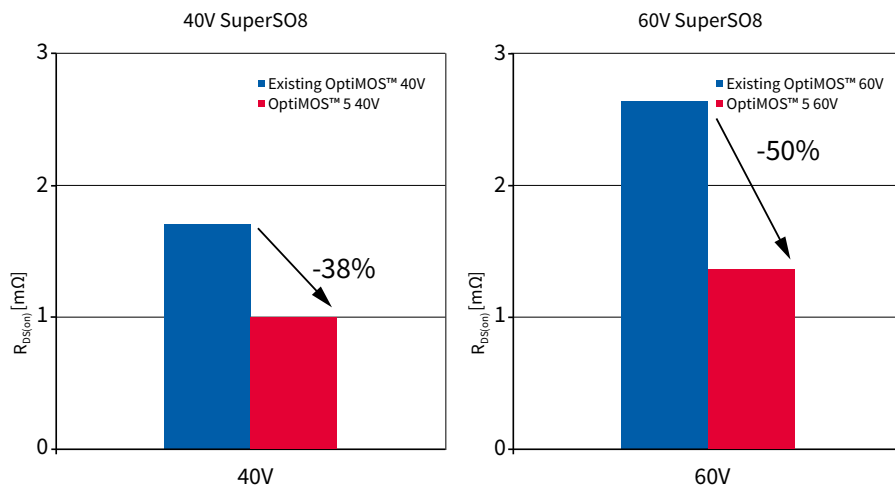
- Optimized for Synchronous Rectification
- 15% lower $R_{DS(on)}$ than alternative devices
- 31% improvement of FOM over similar devices
- Integrated Schottky-like diode
- RoHS compliant - halogen free
- MSL1 rated

Key Benefits

- Highest system efficiency
- Less paralleling required
- Increased power density
- System cost reduction
- Very low voltage overshoot

Applications

- Synchronous Rectification
- Solar micro inverter
- Isolated DC/DC converters
- Motor control for 12-48V systems
- Or-ing switches



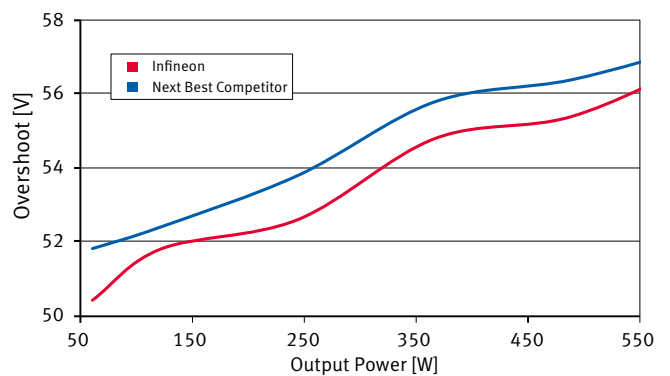
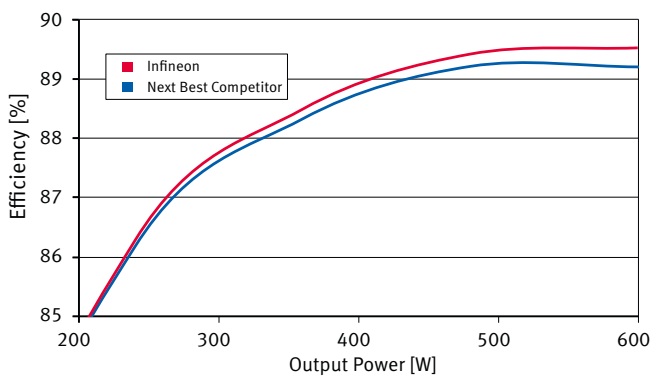
OptiMOS™ 5 40V and 60V

Shrink Your Design and Boost Efficiency

Infinion is the first semiconductor company to introduce a 1mΩ 40V MOSFET in a SuperSO8 package. This cuts the number of MOSFETs in the Synchronous Rectification of a 1000W server power supply by half. No more paralleling is needed and power density can be increased drastically. A monolithic integrated Schottky-like diode reduces the reverse recovery charge (Q_{rr}) in

the relevant current range for Synchronous Rectification. This leads to lower conduction losses and higher efficiency in the system. Furthermore a drastic reduction of the voltage overshoot reduces the need for a snubber circuit and saves engineering cost and effort.

OptiMOS™ 5 60V in the secondary side rectification of a 750W/12V server power supply leads to 0.3% higher system efficiency and reduces the voltage overshoot up to 2V.



OptiMOS™ 5 40V and 60V Product Portfolio

		SuperSO8	S308	TO-220	TO-220 FullPAK	I ² PAK	D ² PAK	D ² PAK 7pin	DPAK
60V	1-2mΩ	BSC014N06NS						IPB010N06N	
		BSC016N06NS		IPP020N06N			IPI020N06N	IPB014N06N	
	2-4mΩ	BSC028N06NS				IPA029N06N		IPB026N06N	
		BSC034N06NS							
	4-6mΩ	BSC039N06NS		IPP029N06N					IPD025N06N
6-10mΩ	BSC066N06NS	BSZ068N06NS		IPP040N06N	IPA040N06N	IPI029N06N	IPB057N06N		IPD053N06N
	BSC097N06NS	BSZ100N06NS		IPP060N06N	IPA060N06N				
40V	1-2mΩ	BSC010N04LS							
		BSC010N04LSI*							
		BSC014N04LS							
		BSC014N04LSI*							
	2-4mΩ	BSC019N04LS							
		BSC022N04LS	BSZ025N04LS**						
		BSC026N04LS	BSZ028N04LS						
		BSC032N04LS	BSZ034N04LS						

*Monolithic integrated Schottky like diode
**coming soon

Published by
Infineon Technologies Austria AG
9500 Villach, Austria

© 2014 Infineon Technologies AG.
All Rights Reserved.

Visit us:
www.infineon.com

Order Number: B152-H9681-G2-X-7600-DB2013-0021
Date: 09/2014

Attention please!

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

Warnings

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office. Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.