

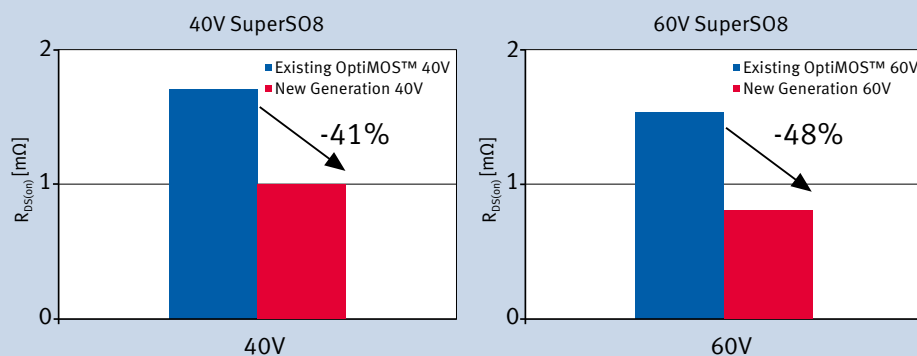
New OptiMOS™ 40V and 60V

Shrink Your Design and Boost Efficiency

New OptiMOS™ 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, solar micro inverter and fast switching DC/DC converter.

New 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. 35% lower $R_{DS(on)}$ and 45% 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 SuperSO8 (5mmx6mm) 60V device).



Features

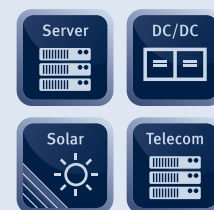
- Optimized for Synchronous Rectification
- 35% lower $R_{DS(on)}$ than alternative devices
- 45% improvement of FOM over similar devices
- Integrated Schottky-like diode
- RoHS compliant - halogen free
- MSL1 rated

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

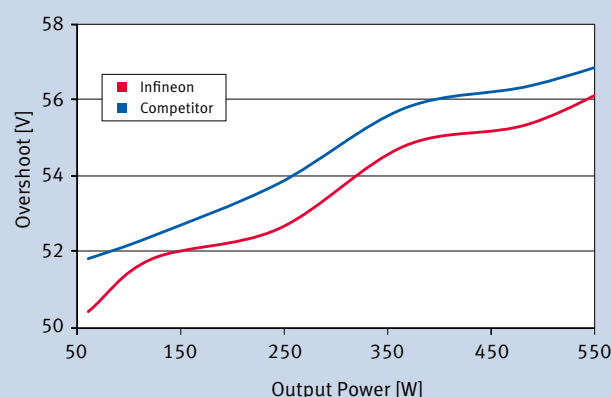
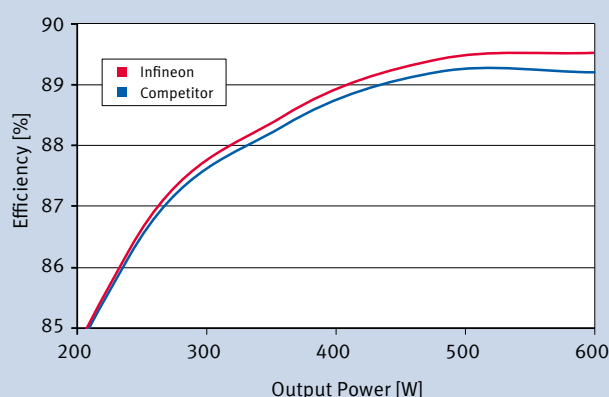


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Infineon is the first semiconductor company to introduce a 1mΩ 40V MOSFET in a SuperSO8 package. This cuts the number of MOSFETs in the Synchronous Rectification of a 1000W server power supply by half. No more paralleling is needed and power density 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™ 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.



Performance comparison of Best in class new OptiMOS™ 60V vs. next best competitor

Product Portfolio New OptiMOS™



		SuperSO8	S308	TO-220	I ² PAK	D ² PAK	D ² PAK 7pin	DDPAK
60 V	1-2 mΩ	BSC016N06NS			IPI020N06N		IPB010N06N	
		BSC014N06NS					IPB014N06N	
	2-4 mΩ	BSC028N06NS		IPP020N06N	IPI029N06N	IPB026N06N		
		BSC039N06NS		IPP029N06N				IPD025N06N
	4-6 mΩ		BSZ042N06NS	IPP040N06N		IPB057N06N		
40 V	1-2 mΩ			IPP060N06N				IPD053N06N
		BSC010N04LS						
		BSC010N04LSI*						
		BSC014N04LS						
	2-3 mΩ		BSZ023N04LS					

*Monolithic integrated Schottky like diode

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