

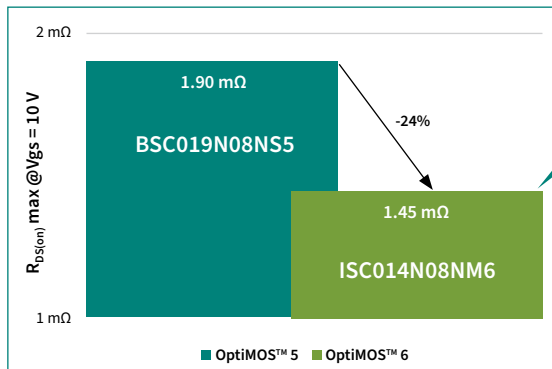
OptiMOS™ 6 power MOSFETs 80 V

The latest power MOSFET technology setting the new industry standard for high power density designs

Infineon expands the latest OptiMOS™ 6 technology family with the introduction of 80 V MOSFETs to the product portfolio. The family is raising the bar with benchmark performance combined with highly efficient packages. The portfolio includes PQFN 3.3x3.3 with $R_{DS(on) \max}$ ranges from 5.3 mΩ to 15.7 mΩ, and PQFN 5x6 (SuperSO8) with $R_{DS(on) \max}$ ranges from 1.45 mΩ to 15.1 mΩ.

Compared to the latest OptiMOS™ 5 technology, Infineon's leading thin wafer technology enables significant performance improvements including >24% lower $R_{DS(on)}$ and ~40% improved $FOM_{Qg \times RDS(on)}$ and $FOM_{Qgd \times RDS(on)}$ in SuperSO8, and >28% lower $R_{DS(on)}$ and ~40% improved FOMs in PQFN 3.3x3.3. The performance improvement allows for easier thermal design and less paralleling, leading to higher system efficiency, higher power density and system cost reduction.

- OptiMOS™ 6 80 V showing industry's best FOM_g and FOM_{gd} . Lower FOM_g and FOM_{gd} are beneficial in SMPS applications for faster turn-on and off, bringing less switching losses together with low conduction losses, delivering the highest efficiency and enabling power density/cost improvements.



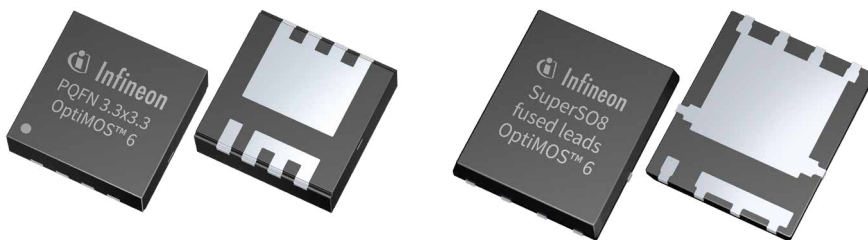
Industry's lowest $R_{DS(on)}$ for a SuperSO8 package

Key features

- Benchmark performance
 - >24% lower $R_{DS(on)}$ and ~40% improved FOMs compared to OptiMOS™ 5 best-in-class in SuperSO8
 - >28% lower $R_{DS(on)}$ and ~40% improved FOMs compared to OptiMOS™ 5 best-in-class in PQFN 3.3x3.3
- Industry-standard package portfolio with $R_{DS(on)}$ option for best cost/performance selection
- Normal level gate drive offers immunity to false turn-on in noisy environments
 - 175°C rated for improved

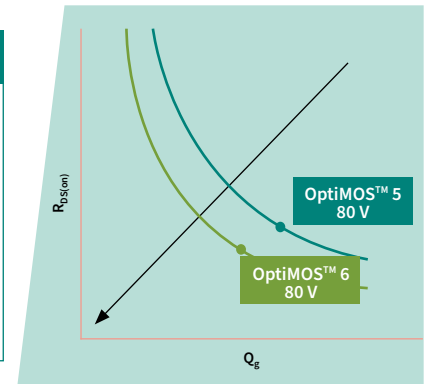
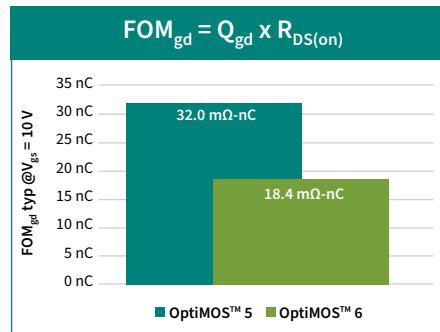
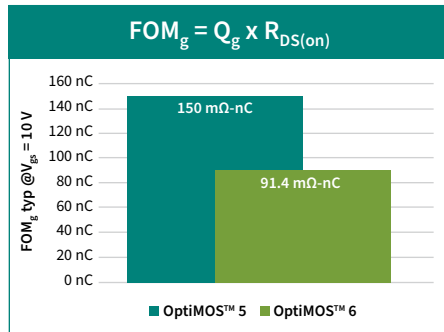
Key benefits

- Rugged linear mode operation
- Low conduction losses
- Higher in-rush current enabled for faster start-up and shorter down time



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Infineon OptiMOS™ 6 80 V family is ideal for high switching frequency applications such as telecom, server and solar. Thanks to the performance improvement, OptiMOS™ 6 80 V can be used also in battery powered application as well as in battery management system (BMS).

The value proposition of OptiMOS™ 6 80 V has been clearly demonstrated in application tests:

- In **datacom** soft-switching LLC 1 kW ¼ brick application: OptiMOS™ 6 80 V ISC014N08NM6 (1.45 mΩ) with industry's lowest R_{DS(on)} in PQFN 5x6 package enables the replacement of two OptiMOS™ 5 BSC030N08NS5 (3.0 mΩ). Efficiency is also improved, up to 0.8%, thanks to the advancements in Q_g, Q_{gd} and R_{oss}.
- In **telecom** hard-switching full-bridge/center-tap, 600 W 1/4th brick application: four OptiMOS™ 6 80 V ISZ053N08NM6 (5.3 mΩ) with industry's lowest R_{DS(on)} in PQFN 3.3x3.3 package can replace four OptiMOS™ 5 BSC040N08NS5 (4 mΩ) enabling the reduction of up to 64% in PCB area. Mid- to full-load efficiency also improves up to 0.3%, thanks to lower Q_{oss} and improvements in figures of merit and Q_{rr}.



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