



## Product Brief

# OptiMOS™ 5 150 V

A breakthrough reduction in  $R_{DS(on)}$  and reverse recovery charge ( $Q_{rr}$ )

The new OptiMOS™ 5 150 V power MOSFETs from Infineon are particularly suitable for low voltage drives such as forklift and e-scooter, as well as telecom and solar applications. The new products offer a breakthrough reduction in  $R_{DS(on)}$  (up to 25 percent compared to the next best alternative in SuperSO8) and  $Q_{rr}$  without compromising  $FOM_{gd}$  and  $FOM_{OSS}$ , effectively reducing design effort whilst optimizing system efficiency. Furthermore, the ultra-low reverse recovery charge (lowest  $Q_{rr}$  in SuperSO8 = 26 nC) increases commutation ruggedness.

The OptiMOS™ 5 150 V technology enables smaller best-in-class SuperSO8 (PQFN 5x6) package devices to replace TO-220 alternatives. The switch provides increased power density and lower voltage overshoot ( $V_{DS}$ ) due to reduced package inductance.

### Key features

- > Lower  $R_{DS(on)}$  without compromising  $FOM_{gd}$  and  $FOM_{OSS}$
- > Lower output charge
- > Ultra-low reverse recovery charge
- > Increased commutation ruggedness
- > Higher switching frequency possible

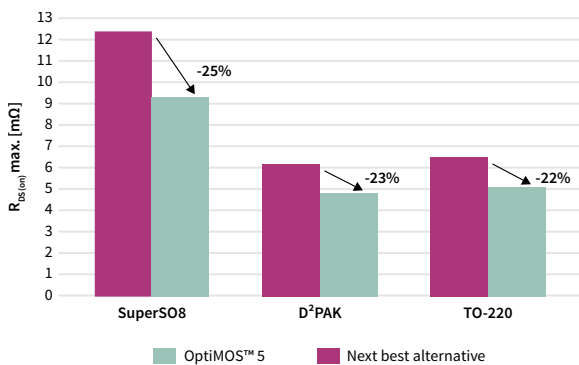
### Key benefits

- > Reduced paralleling
- > Size reduction enabled with SuperSO8 best-in-class
- > Higher power density designs
- > More rugged products
- > System cost reduction
- > Improved EMI behavior

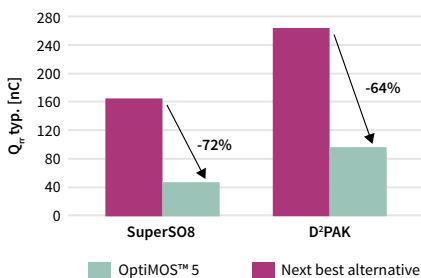
### Applications

- > Low voltages drives
- > Telecom
- > Solar

OptiMOS™ 5 150 V comparison of  $R_{DS(on)}$  in SuperSO8, D<sup>2</sup>PAK and TO-220



OptiMOS™ 5 150 V comparison of  $Q_{rr}$  in SuperSO8



# OptiMOS™ 5 150 V

A breakthrough reduction in  $R_{DS(on)}$  and reverse recovery charge ( $Q_{rr}$ )



Available in six packages, Infineon's OptiMOS™ 5 150 V power MOSFETs demonstrate not only lower output charge and higher switching frequency, but also ultra-low reverse recovery charge ( $Q_{rr}$ ). Consequently, the need for paralleling is reduced and end products are made more rugged, leading to overall system cost reduction.



## Product portfolio

$R_{DS(on)max.}$ at $V_{GS} = 10\text{ V}$ [mΩ]	TO-263 D <sup>2</sup> PAK	TO-263 D <sup>2</sup> PAK 7pin	TO-262 I <sup>2</sup> PAK	TO-220	PQFN 3.3x3.3	SuperS08 PQFN 5x6
4.0 – 5.1	IPB048N15N5 $R_{DS(on)} = 4.8\text{ m}\Omega$	IPB044N15N5 $R_{DS(on)} = 4.4\text{ m}\Omega$	IPI051N15N5 $R_{DS(on)} = 5.1\text{ m}\Omega$	IPP051N15N5 $R_{DS(on)} = 5.1\text{ m}\Omega$		
5.2 – 11.0	IPB073N15N5 $R_{DS(on)} = 7.3\text{ m}\Omega$		IPI076N15N5 $R_{DS(on)} = 7.6\text{ m}\Omega$	IPP076N15N5 $R_{DS(on)} = 7.6\text{ m}\Omega$		BSC093N15NS5 $R_{DS(on)} = 9.3\text{ m}\Omega$ BSC110N15NS5 $R_{DS(on)} = 11.0\text{ m}\Omega$
> 11.0					BSZ300N15NS5 $R_{DS(on)} = 30.0\text{ m}\Omega$	BSC160N15NS5 $R_{DS(on)} = 16.0\text{ m}\Omega$

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