

Product brief

OptiMOS™ 6 40V in SS08

The MOSFET that enables Higher Power Density and Compact Design

Infineon introduces its latest OptiMOS™ 6 40 V power MOS technology in the 5 x 6 mm² SS08 leadless package with highest quality level and robustness for automotive applications. A portfolio of 18 products ($R_{DS(on)}$ (max) from 0.5 mΩ to 4.4 mΩ) which enables the customer to find the best product feet in the their applications. All of this enables the Best-in-Class product FOM ($R_{DS(on)} \times Q_g$) and performance on the market.

The new SS08 product offers 120 A continuous current ratings, which is > 25 percent higher than the standard DPAK at almost half of its footprint area. The footprint area of SS08 is 35 mm² and of the DPAK is 65 mm².

Additionally, the new generation of the SS08 package enables superior switching performance and EMI behavior due to very low package inductance ($\approx 4x$ lower package inductivity vs traditional packages e.g. DPAK, D²PAK) by using the new copper-clip intercontact technology.

A portfolio of 18 products which could address the whole applications range from low-power (e.g. Body applications) to high-power (e.g. EPS) is offered.

- > Enable a higher power density by using the new OptiMOS™ 6 40 V in SS08 product offering.
- > Reach a higher loading (25 percent higher vs. SFET5 BIC SS08) using the same thermal cooling-system.
- > Achieve lower volume/weight enabling savings on the cooling system for the same application power.

The new product family brings the broadest portfolio in the market enabling the best customer offering. Additionally, the SS08 package will be extended to higher voltage classes like 60 V, 80 V and 100 V.

Key features

- > Lower package resistance and inductance
- > Excellent thermal performance
- > Industry's lowest FOM ($R_{DS(on)} \times Q_g$)

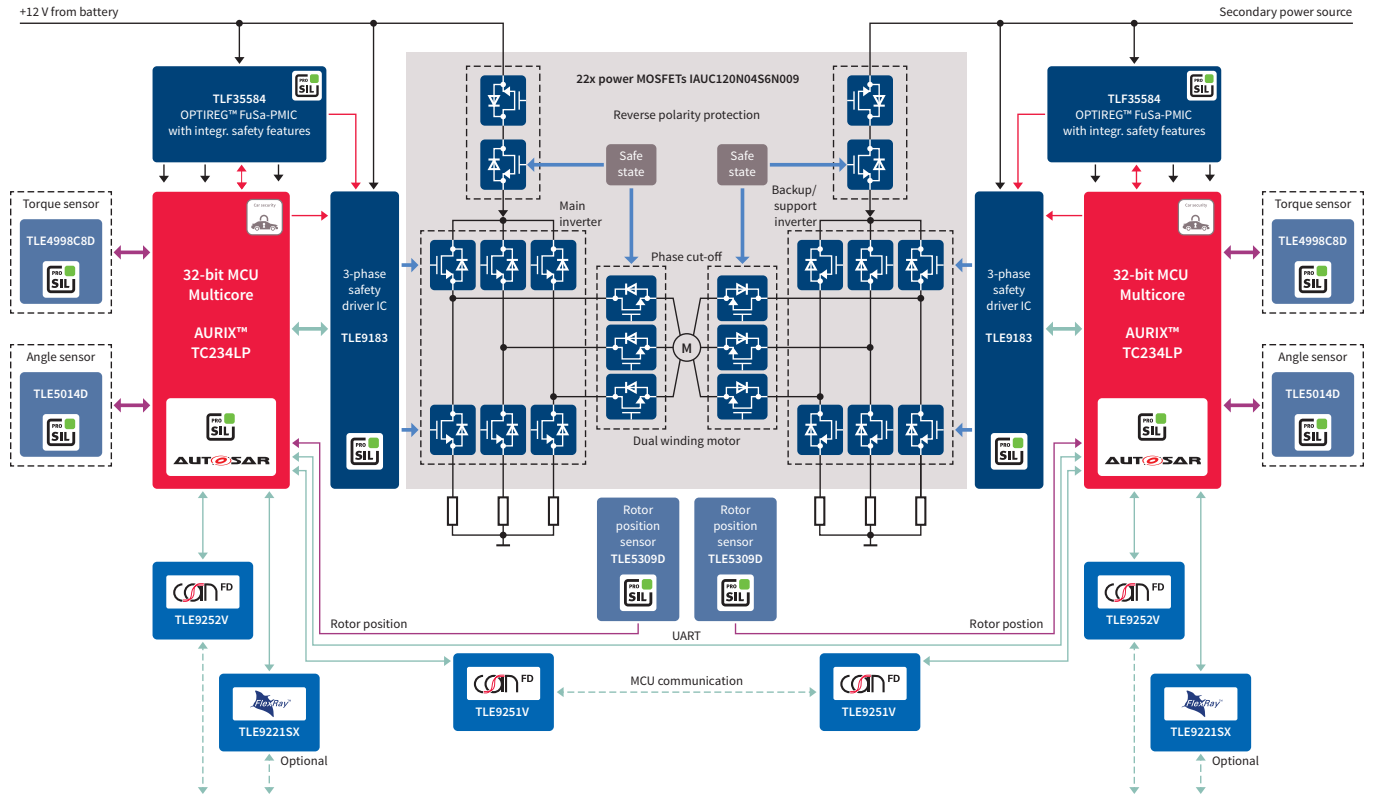
Key benefits

- > Extended automotive qualification (beyond AEC-Q101)
- > Optimized $R_{DS(on)}$ for low conduction losses enabling high efficiency
- > Low gate charge and Q_{rr} for reduced switching losses
- > Excellent thermal performance in compact form factor
- > 25 percent higher current capability (vs. DPAK)

Key applications

- > Electric power steering
- > Engine cooling fan
- > Battery management
- > Brake booster
- > 12–40 V DC-DC converter
- > Body applications (e.g. window lift, wipers, seat-control, etc.)

Electric Power Steering (50% redundant EPS) application diagram using 24x of OptiMOS™ 6 40 V in SS08



Product table

Product name	Voltage [V]	R _{DS(on)} (max) [mΩ]	I _D (max) [A]
IAUC120N04S6L005	40	0.6	120
IAUC120N04S6N006	40	0.6	120
IAUC120N04S6L008	40	0.8	120
IAUC120N04S6N009	40	0.9	120
IAUC120N04S6L009	40	0.9	120
IAUC120N04S6N010	40	1.0	120
IAUC120N04S6L012	40	1.2	120
IAUC120N04S6N013	40	1.3	120
IAUC100N04S6L014	40	1.4	100
IAUC100N04S6N015	40	1.5	100
IAUC100N04S6L020	40	2.0	100
IAUC100N04S6N022	40	2.2	100
IAUC100N04S6L025	40	2.5	100
IAUC100N04S6N028	40	2.8	100
IAUC80N04S6L032	40	3.2	80
IAUC80N04S6N036	40	3.6	80
IAUC60N04S6L039	40	3.9	60
IAUC60N04S6N044	40	4.4	60

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