

## Product Brief

# OptiMOS™ 5 40 V in S308 Package

## Infineon's Latest Generation of Automotive Power MOSFETs

### High Power MOSFETs in S308 (PG-TSDSON-8)

Infineon's new OptiMOS™ 5 40 V product family in S308 package combines leading power MOSFET technology with 3.3 x 3.3 mm leadless power package for very compact & robust automotive system solutions.

OptiMOS™ 5 40 V S308 products are based on Infineon's latest silicon automotive PowerMOS technology, optimized to meet and exceed the energy efficiency and power density requirements of automotive BLDC and H-bridge applications. In combination with Infineon's robust S308 leadless package technology, it enables very small and efficient systems designs with minimal  $R_{DS(on)}$  down to 2.8 mΩ.

### Applications

Brushless DC & Brushed DC drives in body, powertrain and safety applications.

### Key Features

- $R_{DS(on)}$ : 2.8–8.4 mΩ
- S308 Pack: 3.3 x 3.3 mm (PG-TSDSON-8)
- $Q_G$ : max. 40 nC
- Optimized: FOM,  $C_{iss}$ ,  $C_{oss}$

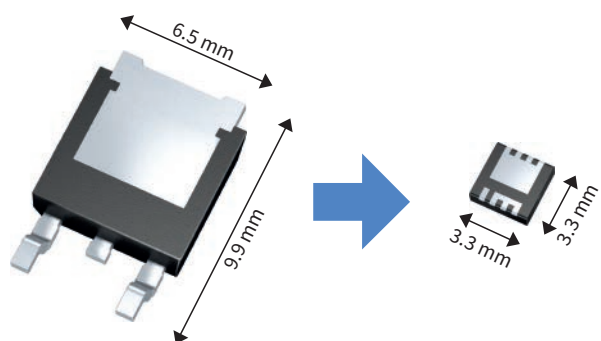
### Technical Key Benefits

- Up to 250 W BLDC drives
- Small package footprint
- Low gate charge @ 2.8 Ω
- Soft switching behavior
- High thermal robustness

### Customer Benefits

- High power density
- Compact system design
- Reduced driver costs
- Low EMI on system level
- High system reliability

### Footprint Comparison: 40 A DPAK vs 40 A S308 (PG-TSDSON-8)



Footprint: 64 mm<sup>2</sup>  
Height: 2.3 mm

Footprint: 11 mm<sup>2</sup>  
Height: 1 mm

~ 80%  
Footprint  
Reduction

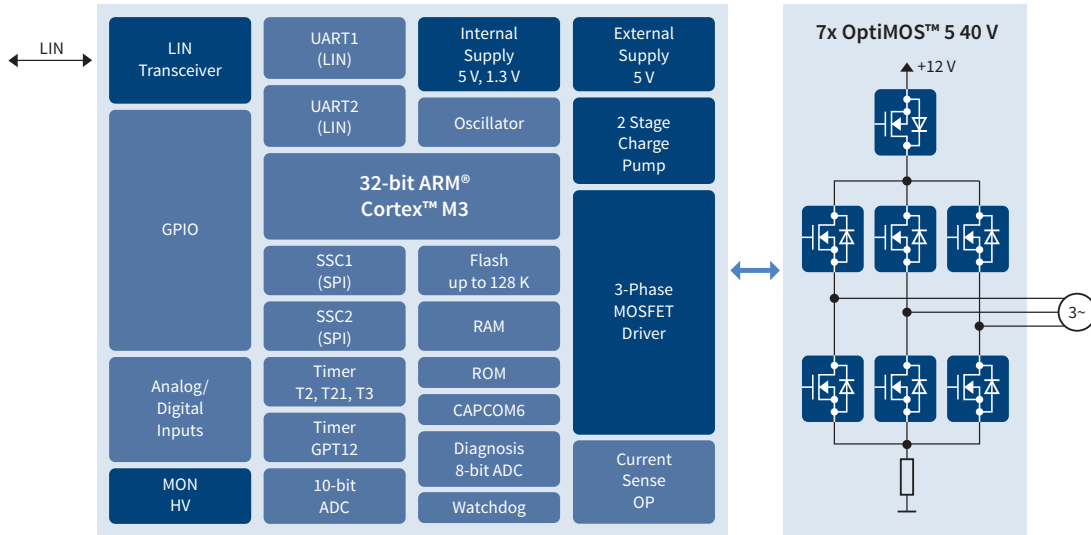
~ 50%  
Height  
Reduction

~ 90%  
Volume  
Reduction

# OptiMOS™ 5 40 V in S308 Package

## Infineon's Latest Generation of Automotive Power MOSFETs

Block Diagram: BLDC Motor Control with TLE9879 3-Phase Motor Control IC and OptiMOS™ 5 40 V



### System Design

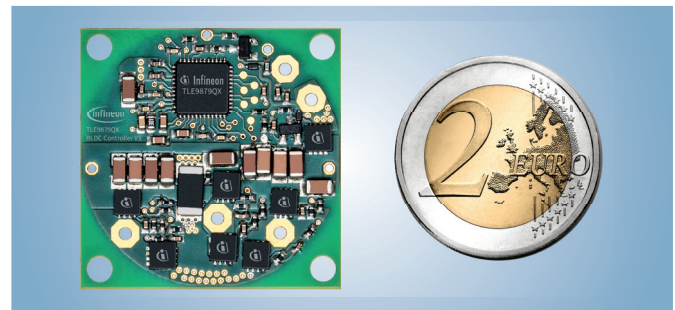
- OptiMOS™ 5 40 V S308 Automotive Power MOSFETs
- 3rd Generation Infineon Embedded Power IC TLE9879 3-Phase Motor Control IC
- Sensor-less field oriented control
- Single shunt measurement method

### System Performance

- PCB space savings thanks to exceptional small footprints:
  - MOSFETs in S308 (3.3x3.3mm)
  - Infineon Embedded Power, System-on-Chip-Solution in VQFN package (7x7mm)
- Motor system power up to ~ 250 W

### Product Summary

Type	Description	Ordering Code
IPZ40N04S5L-2R8	40 V; 2.8 mΩ logic level	SP001152004
IPZ40N04S5-3R1	40 V; 3.1 mΩ normal level 40 V	SP001152006
IPZ40N04S5L-4R8	40 V; 4.8 mΩ logic level	SP001154302
IPZ40N04S5-5R4	40 V; 5.4 mΩ normal level	SP001153440
IPZ40N04S5L-7R4	40 V; 7.4 mΩ logic level	SP001153436
IPZ40N04S5-8R4	40 V; 8.4 mΩ normal level	SP001153438



Published by  
Infineon Technologies AG  
85579 Neubiberg, Germany

© 2015 Infineon Technologies AG.  
All Rights Reserved.

Visit us:  
[www.infineon.com](http://www.infineon.com)

Order Number: B131-I0153-V1-7600-EU-EC-P  
Date: 06/2015

#### Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

#### Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices please contact your nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

#### Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life endangering applications, including but not limited to medical, nuclear, military, life critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.