

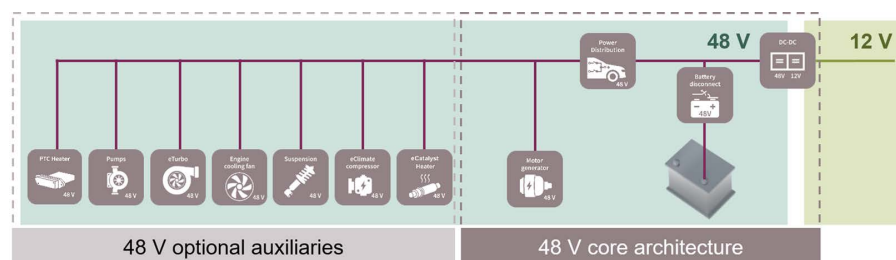
## Product brief

# OptiMOS™ 5 80 V/100 V in TOLT

The perfect solution for your top side cooled ECU

Infineon is extending its product family of 80 V and 100 V MOSFETs based on OptiMOS™ 5 silicon technology. As more and more electronic control units (ECUs) with high power capability are designed with topside cooling of the power stages, Infineon has complemented its MOSFET portfolio with a dedicated package supporting this new requirement.

The TOLT package is perfectly suited for high power 48 V applications like starter generators, DC-DC converters and battery disconnect switches as well as for main inverters of Light Electric Vehicles (LEVs) and e-motor bikes.



### Key features

- > Lowest  $R_{DS(on)}$  down to 1.1 mΩ at 80 V and 1.5 mΩ at 100 V
- > Low package resistance and minimized stray inductance
- > Narrow  $V_{GS(th)}$  ranges
- > Variety of  $R_{DS(on)}$  options for different application power requirements
- > Tight mold body tolerances
- > PINs with negative stand off

### Key benefits

- > High power and current density
- > TOLT package specifically designed for top side cooling
- > Special finish of exposed PAD to ensure best thermal conduction
- > Optimized switching behavior
- > Reduced conduction losses
- > Supports paralleling of MOSFETs
- > Reduced heat flow towards PCB

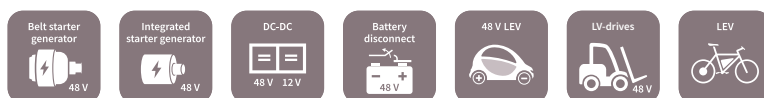
### Key applications

- > 48 V starter generators
- > 48 V DC-DC converter
- > 48 V battery disconnect switches
- > 48 V light electric vehicles

Topside cooling is offering an alternative to the conventional cooling towards the substrate and is targeting ECUs requiring the highest power densities. The heat is conducted for example to an air-cooled metal top side cover with fins instead of the PCB. This can lead to less thermal stress of the substrate and increased reliability at similar power rating, or enables the ECU to provide a higher power capability without exceeding the components' specified maximum temperatures.

The TOLT package provides tight mold body tolerances and the pins are realized with a negative standoff in order to support an optimized thermal stack, which is essential for good thermal conduction. On top of that, the exposed PAD of the TOLT package has a special finish, further supporting an enhanced thermal performance.

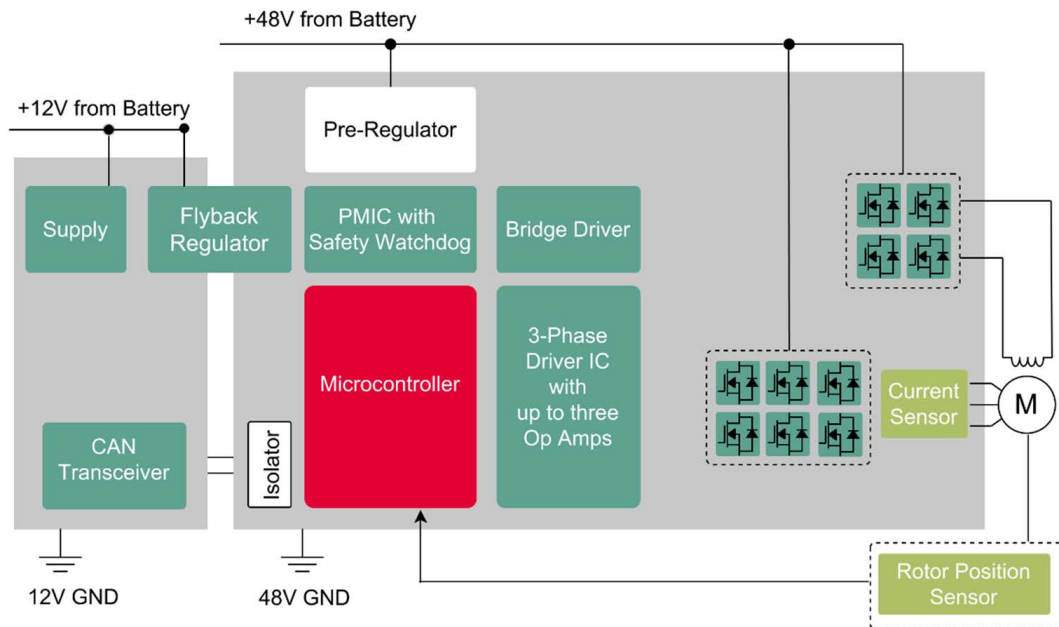
The TOLT devices are also offering narrower  $V_{GS(th)}$  ranges to enable designs with parallel MOSFETs for high power outputs. This makes Infineon's new MOSFET family a perfect solution for topside-cooled ECUs.



# OptiMOS™ 5 80 V/100 V in TOLT

The perfect solution for your top side cooled ECU

Application example: 48 V starter generator



## MOSFET product summary

Type	Description	SP number/orderable part number
IAUS300N08S5N011T	80 V, 1.1 mR automotive MOSFET in TOLT package	SP005432758/IAUS300N08S5N011TATMA1
IAUS300N08S5N012T	80 V, 1.2 mR automotive MOSFET in TOLT package	SP002952344/IAUS300N08S5N012TATMA1
IAUS300N08S5N014T	80 V, 1.4 mR automotive MOSFET in TOLT package	SP002952338/IAUS300N08S5N014TATMA1
IAUS300N10S5N015T	100 V, 1.5 mR automotive MOSFET in TOLT package	SP002952342/IAUS300N10S5N015TATMA1
IAUS260N10S5N019T	100 V, 1.9 mR automotive MOSFET in TOLT package	SP002952334/IAUS260N10S5N019TATMA1

Published by  
Infineon Technologies AG  
81726 Munich, Germany

© 2021 Infineon Technologies AG.  
All Rights Reserved.

### 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.