



New Product Introduction

December 2019

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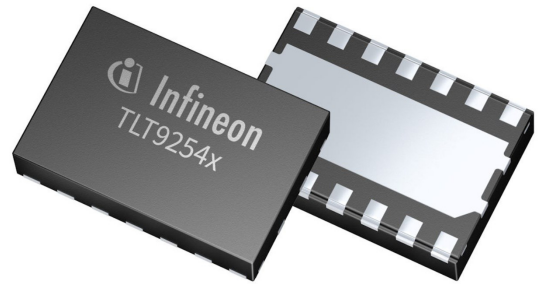
[Automotive CoolSiC™ MOSFETs](#)

TLE9254x - Dual CAN FD 5MB automotive Transceivers

The TLE9254 is part of Infineon's latest High Speed CAN transceiver generation for automotive and also for industrial applications.

The very high transmitter symmetry combined with the optimized delay symmetry of the receiver enables the TLE9254 to support CANFD data frames up to 5Mbit/s.

The TLE9254 fulfills even stringent EMC test limits without additional external circuit, like a common mode choke.



Features

- > Dual channel CAN FD transceiver with very low quiescent current in stand-by mode
- > Wide common mode range for electromagnetic immunity (EMI)
- > Very low electromagnetic emission (EME) allows the use without additional common mode choke
- > Excellent ESD robustness
- > Guaranteed CAN FD symmetry parameters to support CANFD data frames up to 5Mbit/s.
- > Wake-up indication on the RxD output

2 Variants:

- > BUS wake up with VIO (TLE9254VLC, TLE9254VSK)
- > BUS wake up without VIO (TLE9254LC, TLE9254SK)

Benefits

- > Modularity with single IFX CAN FD 5MB transceivers (pin to pin compatibility)
- > Available in TSON-14 with AOI (automatic optical inspection)
- > Boards space saving: -60% smaller compared to DSO-14

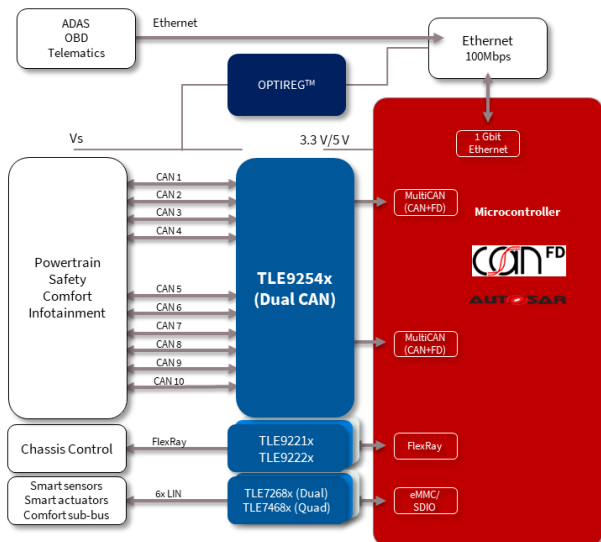
Target applications

- > Fulfills latest ISO standard (e.g. Wake up filter time)

Competitive advantage

- > Microcontroller & Power Supply

Application diagram



Product collaterals / Online support

[Product family page](#)

[Product finder](#)

[Simulation model TLE9254](#)

[Simulation model TLE9254V](#)

[Simulation tool](#)

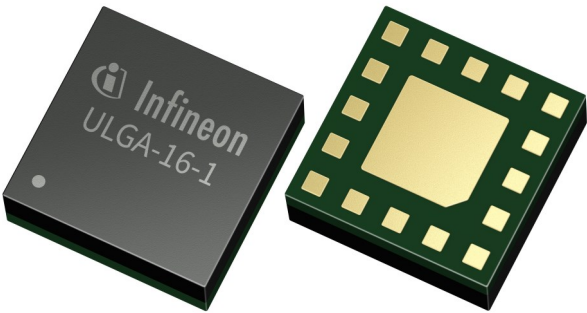
Product overview incl. data sheet link

OPN	SP Number	Package
TLE9254LCXUMA1	SP001701314	PG-TSON-14
TLE9254SKXUMA1	SP001880770	PG-DSO-14
TLE9254VLCXUMA1	SP001880772	PG-TSON-14
TLE9254VSKXUMA1	SP001880774	PG-DSO-14

BGSX24MU16 - High Power DP4T Cross Switch

The BGSX24MU16 RF CMOS switch is specifically designed for cellular applications (LTE, 5G) and can be applied up to 4 antennas.

This DP4T offers very low insertion loss and low harmonic generation. The switch features direct-connect-to-battery functionality and DC-free RF ports; capacitors at the RF Ports are only required if DC voltage is applied externally.



Features

- > High power handling up to 36.5 dBm on operating mode
- > MIPI 2.1 compliant
- > High switching speed max. 1us
- > Applicable to swap up to 4 antennas and find the best antenna constellation

Benefits

- > Reduced power consumption
- > Higher design flexibility
- > Best-in-class connectivity and user experience

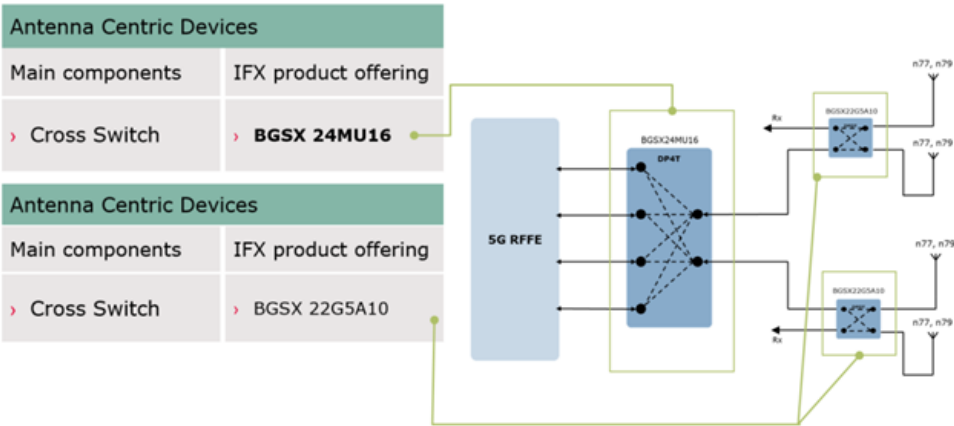
Target applications

- > Mobile cellular (LTE, 5G sub-6GHz)
- > Post PA for power level routing
- > For SRS (TRx) on up to 4 antennas

Competitive advantage

- > High power handling op. max 36.5 dBm
- > Best-in-class performance trade-off between insertion loss and Iso-lation levels against competition
- > Outstanding isolation performance than competition (P2P part QM11124)

Application Block Diagram for 5G scenario n77/n79 frequency bands in a mobile phone



Product overview incl. data sheet link

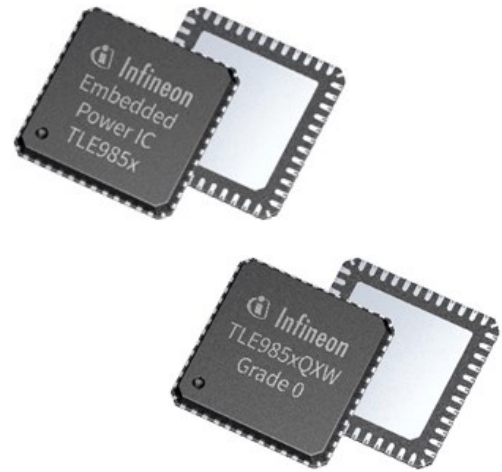
Product collaterals / Online support

[Product page](#)
[Material Content](#)

OPN	SP Number	Package
BGSX24MU16E6327XUSA1	SP004080430	PG-ULGA-16

TLE9850QX/TLE9851QXW - Half-Bridge Driver IC with Arm® Cortex®-M0

Infineon Embedded Power ICs TLE9850QX and TLE9851QXW are highly integrated, AEC Q-100 qualified half-bridge driver motor control solutions for unidirectional applications such as HVAC blowers. Advantages are that the PWM control and the integrated current sense amplifier, which is calibrated, allow the motor currents to be adapted. Consequently, the mechanics and motor can be optimized towards the application requirements. The circuit board and the motor become smaller. At the same time, the noise behavior improves.



Features

- > 32-bit Arm® Cortex®-M0 Core up to 40MHz clock frequency
- > Single power supply $V_S = 5.5\text{ V}$ to 28 V
- > FLASH 48 KB (TLE9850QX) / 64KB (TLE9851QXW), RAM up to 4 KB
- > 1 x LIN transceiver
- > 2 x UART, 2 x SSC
- > Single phase bridge driver with charge pump and PWM generator
- > 1 x low-side shunt current sense amplifier
- > 1 x 10-bit ADC/12 ch and 1x8-bit ADC/9 ch
- > Temperature range $T_J = -40^\circ\text{C}$ to $+150^\circ\text{C}$ (TLE9850QX) / 175°C (TLE9851QXW),
- > Ultra compact application footprint with VQFN-48 packages

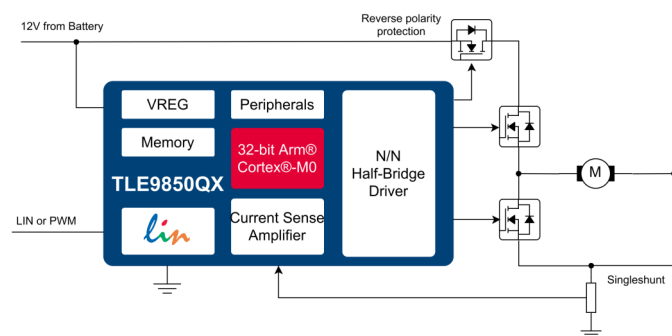
Benefits

- > Cost and board space improvements: The TLE985x family allows driving MOSFETs at $V_{BATT} \geq 6\text{ V}$ with a low number of external components, providing a very cost effective solution on a system level
- > MOSFET driver with adaptive control (Infineon patent): Optimization of the system concerning EME (slow slew rates) and P_{diss} (short dead times) simultaneously
- > Enable high levels of system reliability: Extensive diagnostics and protections are embedded within the system-on-chip

Target applications

- > Automotive motor control for single phase DC motors

Application diagram



Competitive advantage

- > Smallest footprint & minimized number of external components save PCB space
- > Reduced qualification effort for integrated device
- > I_{ddq} best in class therefore less design efforts / better competitiveness
- > ASIL-B on system level can be achieved

Product overview incl. data sheet link

OPN	SP Number	Package
TLE9850QXXUMA1	SP005342068	PG-VQFN-48
TLE9851QXWXUMA1	SP001724006	PG-VQFN-48
TLE985XEVALBOARDTOBO1	SP002245878	board

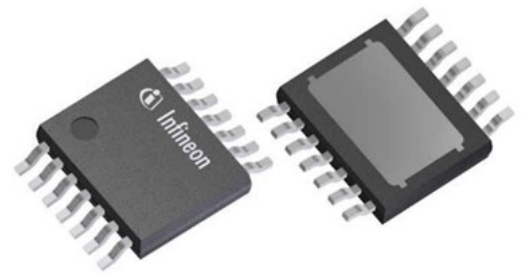
Product collaterals / Online support

[Product family page](#)
[Firmware user manual](#)
[Application brochure](#)
[Application notes](#)

TLD5097EP / TLD5098EP - multi topology DC/DC Controller

The TLD5097EP and the TLD5098EP are LED boost controllers with built in protection features. The controller concept of the TLD5097EP and TLD5098EP allows multiple configurations such as boost, buck, buck-boost, SEPIC and flyback by simply adjusting the external components. Thanks to this the TLD5097EP and the TLD5098EP are a quite easy to use and flexible devices that come without SPI but still with a quite powerful feature set.

TLD5097EP and TLD5098EP are a perfect choice when diagnostic as well as advanced dimming functionality like analog and digital dimming are required and where a DC/DC boost concept is needed like for day-time-running lights or combined low-/high-Beams.



Features

- > Single-channel multi topology (B2B, B2G, SEPIC, flyback) DC/DC controller
- > Constant current or constant voltage regulation
- > Wide Input voltage range from 4.5 V to 45 V
- > Very low shutdown current: $I_{q_OFF} < 10 \mu A$
- > Switching frequency range from 100 kHz to 500 kHz
- > Synchronization with external clock source
- > PWM dimming (integrated gate driver for high accuracy)
- > Analog dimming feature to adjust average LED current
- > Open circuit detection
- > Short to GND protection (only TLD5098EP)
- > Output overvoltage protection
- > Internal soft start
- > Over temperature shutdown
- > 300 mV high side current sense to ensure highest flexibility and LED current accuracy
- > Available in a small thermally enhanced PG-TSDSO-14 package
- > Automotive AEC qualified

Benefits

- > Flexibility (topologies to address different LED architectures/applications)
- > Good EMC performance
- > Increased LED current accuracy
- > Automotive grade

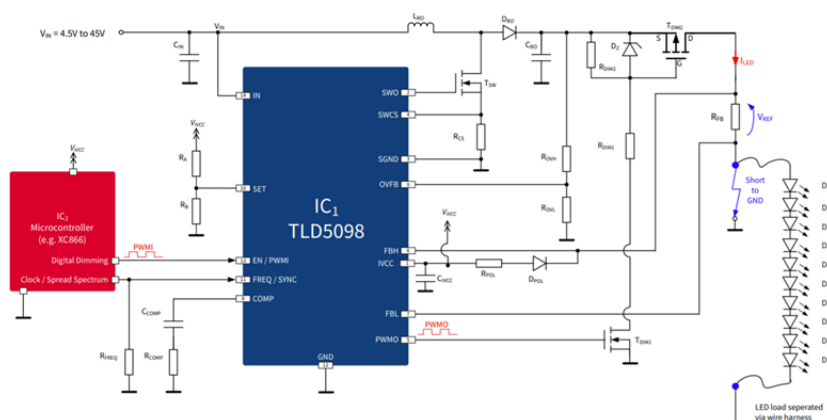
Target applications

- > Automotive interior and exterior lights
- > LED daytime running lights, low beam, high beam or combined low- and high-beams
- > Pre-regulator e.g. for rear light applications

Competitive advantage

TLD509xEP: Multi topology 1ch DC/DC controller family with wide LED current range via simple adaptation of external components. Good EMC performance together with built in protection and diagnostic features. Operating in constant current or constant voltage regulation, PWM and analog dimming.

Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
TLD5098EPXUMA1	SP001653906	PG-TSDSO-14
TLD5097EPXUMA1	SP001662976	PG-TSDSO-14

Product collaterals / Online support

[Product Family Page](#)
[Product Selection Guide](#)
[Application Notes](#)

OptiMOS™ power MOSFETs in TO-220 FullPAK

The OptiMOS™ power MOSFETs in the TO-220 FullPAK are optimized for consumer applications. Our new technology is targeted for Adapter, Gaming, Desktop and TV applications.



Features

- > Low voltage overshoot
- > Reduction of heat generation
- > Isolated package
- > Optimized for synchronous rectification

Benefits

- > Less paralleling required
- > Generated heat is not diverted to the printed circuit board
- > No need for thermal isolation material which is normally used for TO-220 packages

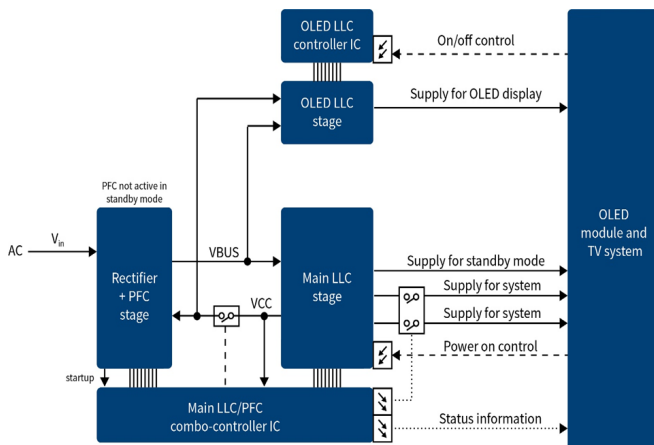
Target applications

- > Adapter
- > Gaming
- > Desktop
- > TV Applications

Competitive advantage

- > Improved efficiency
- > ~20% cost down

Application diagram



Product overview incl. data sheet link

OPN	SP Number	Package
IPA028N04NM3SXKSA1	SP005351627	PG-TO220-3
IPA029N06NM5SXKSA1	SP001953044	PG-TO220-3
IPA040N06NM5SXKSA1	SP001953052	PG-TO220-3
IPA060N06NM5SXKSA1	SP001953056	PG-TO220-3
IPA040N08NM5SXKSA1	SP005351629	PG-TO220-3
IPA052N08NM5SXKSA1	SP001953076	PG-TO220-3
IPA050N10NM5SXKSA1	SP001962884	PG-TO220-3
IPA083N10NM5SXKSA1	SP001953062	PG-TO220-3
IPA126N10NM3SXKSA1	SP001953038	PG-TO220-3
IPA320N20NM3SXKSA1	SP001953018	PG-TO220-3
IPA600N25NM3SXKSA1	SP001953008	PG-TO220-3

Product collaterals / Online support

[Product Family page](#)

[Product Brief](#)

[Application Notes](#)

PowerPROFET™ - BTS50025-1TEA

The BTS50025-1TEA is a 2.5mΩ single channel Smart High-Side Power Switch, providing protective functions and diagnosis. It contains Infineon® ReverSave™ functionality. It is designed to drive high current loads up to 60A, for application like heaters, glow plugs, fan and pump. Embedded in a DPAK package, the BTS50025-1TEA is especially suitable for loads with fluctuating current profile in the harsh automotive environment.



Features

- > 2.5mΩ High side switch with integrated protection features
- > Operating voltage range 3.1-27 V
- > Protection: Short-circuit and over-temperature
- > Load dump protection up to 45 V
- > Diagnosis: load current sense output
- > Reverse battery protection

Benefits

- > High current capability
- > PCB footprint savings
- > Device and load protection
- > Diagnosis and load current monitoring
- > Outstanding Energy capability up to 600mJ @19A (single pulse)
- > Reverse Battery protection
- > Fully integrated solution
- > Outstanding current sense accuracy <3.5% after calibration
- > Very low offset on the current sense: ±150mA on the load

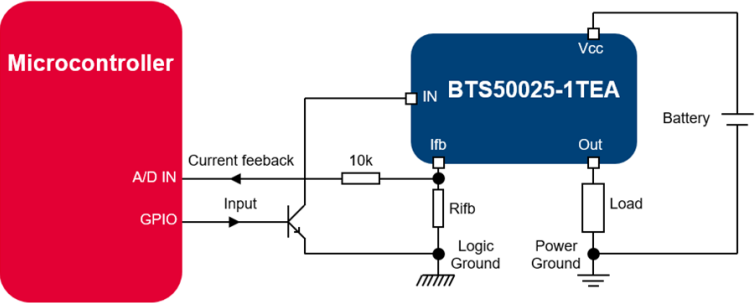
Target applications

- > Glow plugs, PTC
- > Fan, pump
- > Starter relay

Competitive advantage

- > Very low $R_{DS(ON)}$ of 2.5mΩ in a smaller package
- > Lower footprint with a DPAK package enables system cost reduction
- > Easy to use device with several protection mechanism
- > Higher inrush

Application diagram



Product overview incl. data sheet link

OPN	SP Number	Package
BTS500251TEAAUMA1	SP001623920	PG-TO252-5

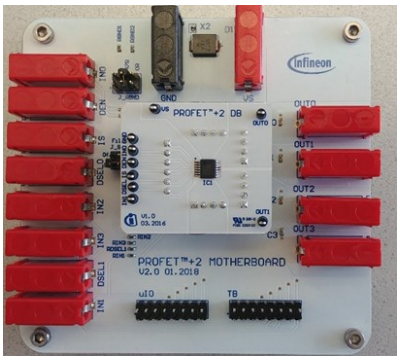
Product collaterals / Online support

[Product Page](#)

PROFET™+2 12V evaluation boards for body and power distribution applications

The PROFET™+2 12V evaluation board is tailored for body and power distribution applications. The purpose of these boards is to provide a quick pick and place solution for lab evaluations. The PROFET™+2 evaluation board portfolio consists of one motherboard and 15 different daughterboards.

The motherboard in combination with one daughterboard is capable to drive typical automotive loads.



Features

- > Operating voltage range 3.1–28 V with 3.3 V and 5 V compatible logic input (Operating voltage range EPC variant: 2.7-28V)
- > Lowest $R_{DS(ON)}$ on small footprint $8m\Omega - 200m\Omega$ in TSDSO-14
- > Protection concept with current tripping and intelligent restart control
- > Diagnosis with load current sense output
- > Optimized for design flexibility across the family by pin to pin and external components compatibility
- > Miniaturization / shrink of the PCB area

Benefits

- > 50% reduced internal operating current consumption
- > Simplified & cost efficient ground network
- > Outstanding current sense accuracy (k_{ILIS}) $\leq 4\%$ @ nominal load current
- > Benchmark cranking voltage capability able to work down to 3.1 V (EPC variant cranking voltage capability down to 2.7 V)
- > Smaller package size for area savings
- > Optimized for design flexibility across the family by pin to pin compatibility
- > Very low output leakage current ($\leq 0.5\ \mu A$ up to $85^{\circ}C$)

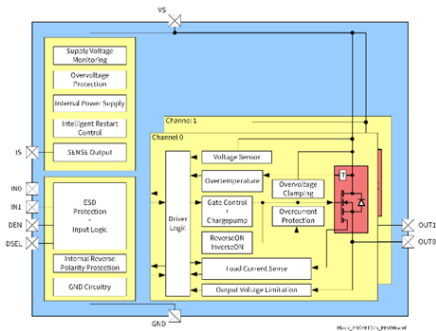
Competitive advantage

- > Energy efficiency and miniaturization

Target applications

- > Suitable for driving up to 11A resistive, inductive, capacitive loads
- > Suitable for driving body loads and general power distribution

Block diagram



Customer evaluation kit

OPN	SP Number	Package
PROFETPLUS2MOTHBRDTOBO1	SP001782724	board
BTS70081EPADAUGHBRDTOBO1	SP001782666	board
BTS70082EPADAUGHBRDTOBO1	SP001782682	board
BTS70101EPADAUGHBRDTOBO1	SP001782670	board
BTS70102EPADAUGHBRDTOBO1	SP001782686	board
BTS70121EPADAUGHBRDTOBO1	SP001782674	board
BTS70122EPADAUGHBRDTOBO1	SP001782690	board
BTS70202EPADAUGHBRDTOBO1	SP001782694	board
BTS70302EPADAUGHBRDTOBO1	SP001782698	board
BTS70401EPADAUGHBRDTOBO1	SP001782678	board
BTS70402EPADAUGHBRDTOBO1	SP001782702	board
BTS70802EPADAUGHBRDTOBO1	SP001782706	board
BTS71202EPADAUGHBRDTOBO1	SP001782710	board
BTS72002EPADAUGHBRDTOBO1	SP001782714	board
BTS72002EPCDAUGHBRDTOBO1	SP002944558	board
BTS72004EPADAUGHBRDTOBO1	SP001782718	board

Product collaterals / Online support

- [Product Family Page](#)
- [Product Brief](#)
- [Application Brochure](#)

EconoDUAL™ 3 with TRENCHSTOP™ IGBT7

The new best-in-class EconoDUAL™ 3 module, FF900R12ME7_B11, is equipped with the latest TRENCHSTOP™ IGBT7 chip generation. It provides 30% higher inverter output current for the same frame size compared to the former IGBT generation. The higher power density helps to avoid paralleling of IGBT modules, leading to a simplification of the inverter design and lower costs.



It is tailored for general purpose drives, hybrid electric busses, commercial and agricultural vehicles and solar applications.

Features

- > 900 A, 1200 V EconoDUAL™ 3
- > TRENCHSTOP™ IGBT7 chip technology
- > Improved EconoDUAL™ 3 housing
- > PressFIT control pins and screw power terminals
- > Increased creepage distance to 15 mm
- > Integrated NTC temperature sensor
- > Compact and robust design with molded terminals

Benefits

- > Best-in-class with 900 A and 1200 V
- > 30% higher inverter output current for the same frame size
- > Avoid paralleling of IGBT modules
- > Reduced system cost by simplification of the inverter systems
- > Reduced mounting-effort
- > Increased inter-connection reliability

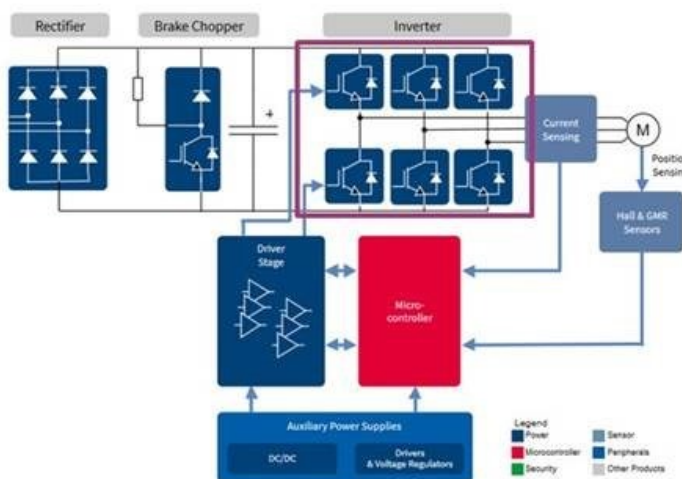
Target applications

- > General Purpose Drives
- > CAV
- > Hybrid Electric Vehicles
- > Solar

Competitive advantage

- > Reduced system cost by highest power density and performance

Application diagram for Industrial Drives



Product overview incl. data sheet link

OPN	SP Number	Package
FF900R12ME7B11BOSA1	SP002447582	AG-ECONOD-5

Product collaterals / Online support

[Product page](#)

[EconoDUAL™ 3 Family Page](#)

[TRENCHSTOP™ IGBT7 Family Page](#)

[Application Notes](#)

[Whitepaper](#)

XENSIV™ - New (!)Sensor Shield2Go

Infineon's well-established evaluation environment of Shield2Go gets expanded with new products of the XENSIV™ sensor family. Our existing portfolio of security and sensor Shield2Go boards will be enhanced by 3 new Shield2Go, comprising a 3D magnetic Hall sensor with integrated wake-up functionality, a single Hall (proximity detection) as well as one dual Hall sensor (rotational speed and direction). Just for you as a recap: The Shield2Go concept provides highest flexibility for your application. Each Shield2Go is equipped with just one Infineon sensor IC. The hardware concept of Shield2Go relies on a standardized form factor and pin layout enabling simple orientation and guidance for all users. The ready-to-use, free Arduino libraries emphasize this statement from a software perspective. A selection of sensors, microcontrollers and security ICs allows you to flexibly and freely combine and integrate them into your applications. Check out the new sensor Shield2Go boards!



Features

- > 3 new types of Shield2Go including 2 Hall switches
- > Arduino library for plug and play
- > Fast evaluation

Target applications

- > Smart Home
- > Smart Building
- > Industry 4.0
- > Industrial Automation
- > Window lift
- > Index counting
- > Magnetic direction and speed measurement
- > Magnetic proximity detection
- > Internet of Things

Competitive advantage

- > Standardized footprint for easy orientation
- > Customize your application by simply replacing or adding ICs
- > SW Starter package based on Arduino

Benefits

- > Out of the box
- > Flexibility
- > Faster time to market
- > Ease of use
- > Fast prototyping
- > Simplicity

Product collaterals / Online support

[TLE4966K Double Hall Shield2Go](#)

[TLE4964-3M Hall Sense Shield2Go](#)

[TLE493DW2B6 3DSense Shield2Go](#)

[XENSIV™ – Sensor 2GO kits and Shield2Go](#)

[Infineon for Makers – Shield2Go Overview](#)

[Product brochure-Shield2Go](#)

[Whitepaper for Shield2Go boards and My IoT adapter](#)

[XENSIV™ magnetic Hall switches](#)

[XENSIV™ 3D magnetic Hall sensors](#)

[Infineon Github account for free Arduino software](#)

[Infineon XENSIV™-sensing the world selection guide](#)

[Infineon XENSIV™ - pocket guide](#)

Product overview incl. data sheet link

OPN	SP Number	Package
S2GOHALLTLE49643MTOBO1	SP004308590	board
S2GO2HALLTLE4966KTOBO1	SP004308598	board
S2GO3DTLE493DW2B6A0TOBO1	SP004308594	board

Automotive CoolSiC™ MOSFETs

The Automotive CoolSiC™ MOSFETs has been developed for current and future On-Board Charger and DC-DC applications in hybrid and electric vehicles. It is specifically designed to meet the high requirements demanded by the automotive industry with regards to reliability, quality and performance



Features

- > Industry-leading SiC MOSFET in trench technology at 1200 V in TO247 package
- > Operating temperature up to T_J, max = 175°C
- > Easy to control through best-in-class VGS threshold behavior
- > Short-circuit & avalanche robustness
- > Qualified according AEC-Q101 + best-in-class Infineon SiC quality extension

Benefits

- > Best match with IGBT, CoolMOS™ and CoolSiC™ schottky diode products
- > Very high efficiency over all load conditions to fulfill tough application efficiency standards
- > Extremely robust design to fulfill our customer's mission profiles
- > High reliability for best-in-class lifetime based on more than a decade field experience

Target applications

- > On-Board Chargers (PFC stage & DC-DC stage)
- > DC-DC converters
- > Auxiliary inverters

Competitive advantage

Automotive CoolSiC™ MOSFETs are high voltage semiconductors designed for power conversion in on-board-chargers and auxiliary systems. Based on a 110µm thin wafer technology, they generate very low electrical losses.

Application diagram



Product overview incl. data sheet link

OPN	SP Number	Package
AIMW120R045M1	SP002472666	PG-TO247-3

Product collaterals / Online support

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[Application notes](#)