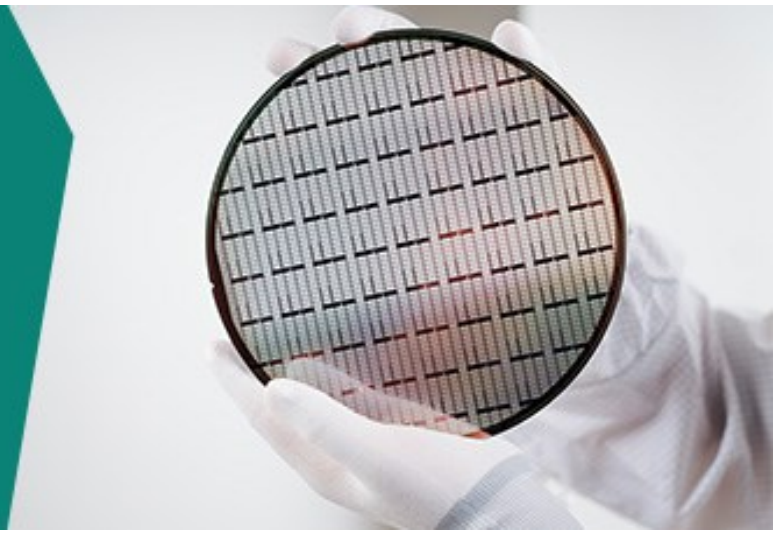
New Product Introduction



New Product Introduction

March 2025

[9ch BMS balancing and monitoring IC TLE9009DQU]

[PSOC™ 4000T Microcontroller | featuring multi-sense with capacitive, inductive, and liquid level sensing]

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[MOTIX™ TLE9166 for door control]

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[BGAP3D30H pre-driver: high-power pre-driver for wireless infrastructure]

[XENSIV™ – 3D magnetic Hall sensor family TLE493D-X3XX]

[XENSIV™ – KP465 air pressure sensor]

[CoolSET™ 5G QR PLUS boards]

[Evaluation board EVAL-1EDSIC-PFC-5KW]

[REF_48V_270W_EBIKE: compact motor drive inverter for e-bikes]

9ch BMS balancing and monitoring IC TLE9009DQU

The TLE9009DQU is a multi-channel battery monitoring and balancing IC crafted for Li-Ion battery packs in automotive (MHEV, HEV, PHEV, BEV), industrial (ESS), and consumer applications (e-bike BMS, home energy storage). It handles cell voltage and temperature measurement, cell balancing, and isolated communication to the main battery controller. Moreover, it includes essential diagnostic tools for safety assurance.

Features

- Balancing and monitoring for up to 9 cells in series
- Robust Infineon 90 V / 130 nm automotive technology supports harshest stress and noise events and enables digital features
- Industry-leading accuracy values to boost battery range and efficiency
- Dedicated 16-bit delta-sigma ADC per cell enabling synced and filtered measurements, incl. built-in digital filtering for a minimum of external components and reduced system cost
- Supporting up to ASIL D BMS safety applications
- Compatible with Infineon complex device driver for AURIX™TC38x

Benefits

- Infineon technology and device architecture
  - Best in class application robustness
  - Best performance under noise
- Highly accurate voltage measurement
  - Reliable and precise cell monitoring
  - Enables accurate SoC / SoH measurement
- Lowest system cost
  - Small package (TQFP-48) for lean PCB
  - Min. amount external components needed
  - High feature integration for lean BOM

Competitive advantage

- High accuracy with parallel ADC architecture to maximize battery pack efficiency
- Robust 90 V / 130 nm automotive technology enables lean design for lowest system cost with only a minimum number of external (protection, filter) components needed
- Superior quality reflected in lowest return rates, setting industry benchmark
- Configurable and ASIL D complex device driver available for convenient design-in

Target applications

- Battery electric vehicle (BEV)
- Mild hybrid electric vehicle (MHEV)
- Hybrid electric vehicle (HEV)
- Plug-in hybrid electric vehicle (PHEV)
- 12 V Li-Ion battery systems
- Energy storage system (ESS)
- Home energy storage system

Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
TLE9009DQUXUMA1	SP003903978	PG-FQFP-48

PSOC™ 4000T Microcontroller - featuring Multi-Sense with capacitive, inductive, and liquid level sensing

PSOC™ 4000T family of Arm® Cortex®-M0+ microcontrollers feature Infineon's 5th generation high-performance Multi-Sense technology, including CAPSENSE™, inductive and liquid level sensing technology. PSOC™ 4000T provides a 10x higher signal-to-noise ration (SNR) performance and a 10x lower power consumption than the previous generation. It also features "Always-On" touch sensing technology with improved performance that enables HMI operation with low active and standby power consumption supporting longer battery life for battery powered products. PSOC™ 4000T family includes standard communication, timing peripherals, 5th generation CAPSENSE™ and Multi-Sense HMI technology, built for a variety of low power applications including wearables, hearables, and smart connected IoT products. Multi-Sense expands capacitive sensing with best-in class inductive sensing for new use cases like touch over metal, force touch and proximity sensing. The combined sensing technologies in PSOC™ 4000T enable modern sleek user interfaces with superior liquid tolerance and reliable touch HMI solution for harsh environments. In addition, the PSOC™ 4000T provides an easy-to-implement upgrade path for PSOC™ 4000 and PSOC™ 4000S based designs to take advantage of the 5th generation CAPSENSE™ and Multi-Sense with software and package compatibility.

Features

- 32-bit MCU subsystem: 48-MHz Arm® Cortex®-M0+, 64 KB flash and 8 KB SRAM
- 5th generation CAPSENSE™ and Multi-Sense
  - Supports self-capacitive and mutual-capacitive sensing
  - Inductive sensing, liquid sensing and CAPSENSE™ hover touch
  - Ultra-low power consumption
- Programmable digital blocks
  - Two 16-bit timer/counter/pulse-width modulator (TCPWM) blocks
  - Two serial communication blocks (SCBs) that are configurable as I2C, SPI, or UART
- I/O subsystem: up to 21 GPIOs, including 16 sensor inputs
- Packages: 25-WLCSP, 24-QFN, 16-QFN

Benefits

- Multi-Sense capabilities with wide range of HMI options
- 10x higher SNR
- 10x lower power consumption
- CAPSENSE™ hover touch for long range proximity gestures
- Inductive sensing for metallic surface and force touch
- Contactless liquid sensing with high-resolution and foam rejection

Competitive advantage

- Multi-Sense solution enabling capacitive, inductive, and liquid level sensing
- Quick and easy solution to implement HMI into a product
- Autonomous MCU single chip solution without the need of an external application host
- 10x lower average power consumption with ultra-low power always-ON sensing

Product collaterals / Online support

Product family page PSOC™ 4000T MCU

Board page PSOC™ 4000T evaluation kit

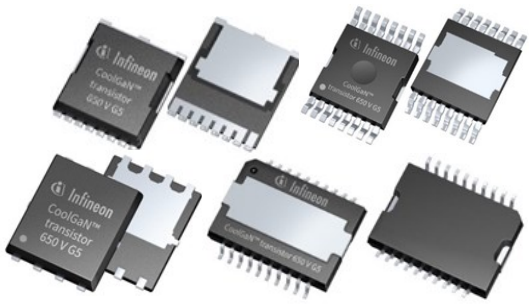
Target applications

- Wearable | hearable: wear detection, touchscreen, slider, TP-gestures
- Smart home, appliance: proximity wakeup (backlight), capacitive keypad, hover touch, inductive touch, slider, trackpad
- Other consumer and industrial: proximity wakeup (backlight), capacitive keypad, slider, trackpad, liquid level sense

Product overview incl. datasheet link and user manual

OPN	SP Number	Package
CY8C4026LQIT442XQSA1	SP006050946	PG-VQFN-24
CY8C4046LQI-T451	SP005740770	PG-USON-16
CY8C4046LQI-T452	SP005740727	PG-VQFN-24
CY8CPROTO-040T-MS	SP006073363	Kit

CoolGaN™ transistors 650 V G5



The new generation of 650 V GaN power transistors allows for increased efficiency at high-frequency operation and meets the highest quality standards, enabling highly reliable designs with superior efficiency.

Available in top-side cooled TOLT and DSO as well as the bottom-side cooled ThinPAK 5x6 package, this new family of GaN transistors is designed for optimal power dissipation and slim form factors in various industrial and consumer applications.

Features

- 650 V e-mode power transistor
- Ultrafast switching
- No reverse-recovery charge
- Capable of reverse conduction
- Low gate charge, low output charge
- Superior commutation ruggedness
- Low dynamic $R_{DS(on)}$
- High ESD robustness: 2 kV HBM - 1 kV CDM
- Top-side cooled package or bottom-side cooled package
- JEDEC qualified (JESD47, JESD22)

Target applications

- AC-DC auxiliary power supplies
- AC-DC power conversion for telecom infrastructure
- Consumer electronics
- Datacenter and computing solutions
- EV charging
- Industrial power supplies
- Home appliances
- Photovoltaic
- Power conversion
- USB-C adapters and chargers

Benefits

- Supports high operating frequency
- Enables highest system efficiency
- Enables ultrahigh power density designs
- Supports BOM cost savings

Product collaterals / Online support

Product family page

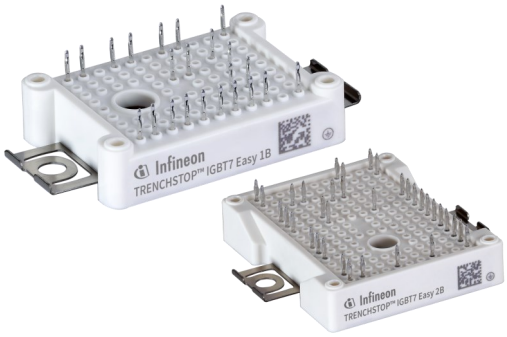
Product overview incl. datasheet link

OPN	SP Number	Package
IGLR65R140D2XUMA1	SP005825105	PG-TSON-8
IGLR65R200D2XUMA1	SP005918715	PG-TSON-8
IGLR65R270D2XUMA1	SP005825094	PG-TSON-8
IGOT65R025D2AUMA1	SP005882212	PG-DSO-20
IGOT65R035D2AUMA1	SP005825080	PG-DSO-20
IGOT65R045D2AUMA1	SP005930895	PG-DSO-20
IGOT65R055D2AUMA1	SP005825074	PG-DSO-20
IGLT65R025D2AUMA1	SP005934582	PG-HDSOP-16
IGLT65R035D2ATMA1	SP005918703	PG-HDSOP-16
IGLT65R045D2ATMA1	SP005918712	PG-HDSOP-16
IGLT65R055D2ATMA1	SP005865971	PG-HDSOP-16
IGLT65R110D2ATMA1	SP005934583	PG-HDSOP-16

EasyDUAL™ 1B and 2B, 1200 V common emitter IGBT module with TRENCHSTOP™ IGBT T7 FFxxxR12WxT7E_B11

A portfolio of EasyDUAL™ 1200 V 1B and 2B modules in common emitter topology featuring the established TRENCHSTOP™ IGBT T7 and Emcon 7 technologies, ranging from 75 A, 100 A, 150 A, 200 A to 300 A.

The modules are equipped with PressFIT contact technology and NTC. This line-up of EasyDUAL™ 1B and 2B common emitter is a perfect fit for advanced drive application of matrix converter.



Features

- Easy family with 12 mm height
- Very low stray inductance
- Overload capabilities up to 175°C with IGBT T7 technology
- PressFIT pins

Benefits

- Easy to design
- Increased power density
- Best cost-performance with reduced system costs

Competitive advantage

- A broad portfolio of common emitter topology in established Easy packages and TRENCHSTOP™ IGBT T7 technologies targets specifically matrix converter application
- This common emitter portfolio offers the best cost-performance solution for drive application.

Target applications

- Matrix converter

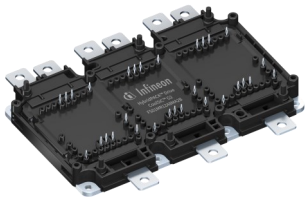
Product collaterals / Online support

Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
FF75R12W1T7EB11BPSA1	SP005751880	AG-EASY1B-711
FF100R12W1T7EB11BPSA1	SP005431738	AG-EASY1B-711
FF150R12W2T7EB11BPSA1	SP005751900	AG-EASY2B-711
FF200R12W2T7EB11BPSA1	SP005751919	AG-EASY2B-711
FF300R12W2T7EB11BPSA1	SP005751871	AG-EASY2B-711

HybridPACK™ Drive G2 FS01MR12A8MA2B



The HybridPACK™ Drive G2 is a compact B6-bridge power module optimized for traction inverter applications, offering scalability up to 300 kW within the 750 V and 1200 V class.

The HybridPACK™ Drive G2 product family is available with different current ratings, voltage levels and Infineon's next generation chip technologies EDT3 (Si IGBT) and CoolSiC™ G2 MOSFET. HybridPACK™ drive G2 additionally provides new features for optimal system cost, such as an integration option for next-generation phase current sensor.

Features

- Electrical features
  - New semiconductor material - silicon carbide
  - Low $R_{DS(on)}$
  - Low switching losses
  - Low Q_g and C_{rss}
  - Low inductive design
  - $T_{vj,op}$ = 175°C
  - Short-time extended operation temperature $T_{vj,op}$ = 200 °C
- Mechanical features
  - 4.2 kV DC 1 second insulation
  - High creepage and clearance distances
  - Compact design
  - High power density
  - Direct-cooled PinFin base plate
  - High-performance Si_3N_4 ceramic
  - Guiding elements for PCB and cooler assembly
  - Integrated temperature sensing diode
  - PressFIT contact technology
  - RoHS compliant, lead-free
  - UL 94 V0 module frame

Benefits

- Higher temperature cycling capability
- Integrated diode temperature sensors
- New plastic material for better temperature capability
- New frame design for lower system BOM
- Lower AC contact resistance and tab temperature
- PressFIT contact technology
- RoHS compliant
- Completely Pb free
- Superior reliability

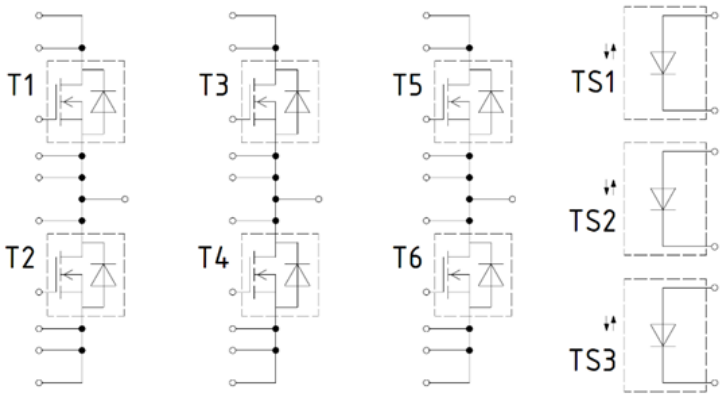
Competitive advantage

- Enable scalable inverter platform development
- Superior gate oxide and cosmic ray reliability
- Improved thermal conductivity
- High robustness over entire temperature range
- Increased durability especially in harsh environment

Target applications

- Automotive traction inverter
- CAV traction inverter

Block diagram



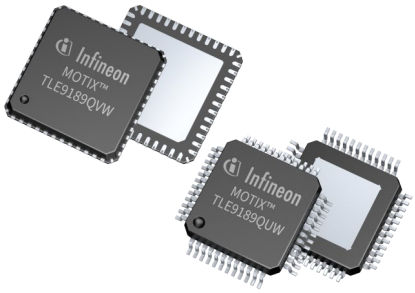
Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
FS01MR12A8MA2BHPSA1	SP005414309	AG-HDSICXT-1

MOTIX™ TLE9189QVW and TLE9189QUW gate driver ICs for BLDC motors



MOTIX™ TLE9189 is a 3-phase gate driver IC designed for 12 V batteries. The device is qualified according to AEC Q100 Grade 0 and ISO 26262 (ASIL D). This makes the device particularly suitable for by-wire systems of the future.

The MOTIX™ TLE9189 gate driver IC for BLDC motors will be available in two different packages, the TQFP-48 (9x9 mm²) and the VQFN-48 (7x7 mm²). Comprehensive support materials are available and include technical documentation, simulation models, configuration tools and software (complex device driver).

Features

- Drives 6 MOSFETs up to Q_{Gtot} = 200 nC at 20 kHz
- Adaptive MOSFET control feature integrated
- Supply voltage range of 4.2 V to 36 V
- 0...100% duty cycle adjustable without restrictions
- Motor control concept with PWM input
- 3 current sense CSAs with 1.5 µs settle time and ±1% accuracy

Benefits

- Variety of monitoring and diagnostic functions
- Precise configurable reference voltage for CSA
- Fully operational down to low voltages 4.2 V
- Motor connection pins rated -12 V for transients
- All detected errors and warnings can be read
- Multiple thresholds and filter timings are configurable via SPI

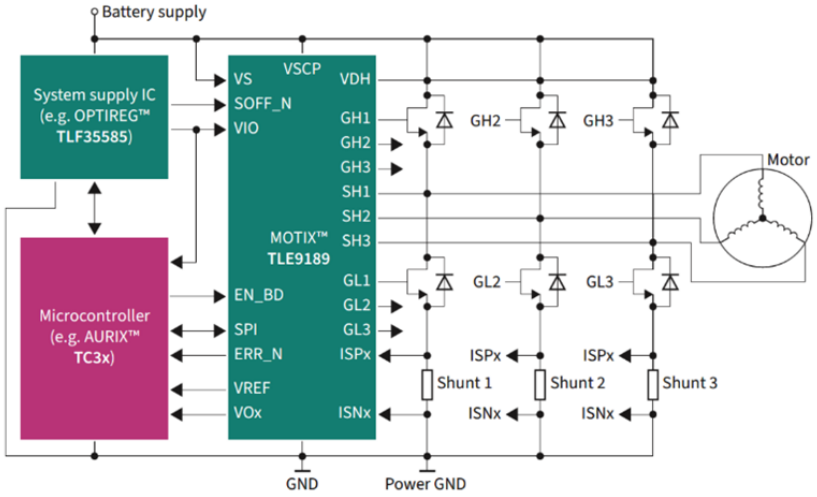
Competitive advantage

- Scalable device available in tiny VQFN 48 and TQFP-48 package
- Reduce customer system cost due to reduced external components needed
- Adaptive MOSFET control allows to
  - Improve EMC performance
  - Reduce power losses
  - Achieve target switching timing

Target applications

- Electric power steering (EPS)
- Electric brake booster (EBB)
- By-wire-systems (steer-by-wire, brake-by-wire)
- Safety related applications

Block diagram



Product collaterals / Online support

Product family page

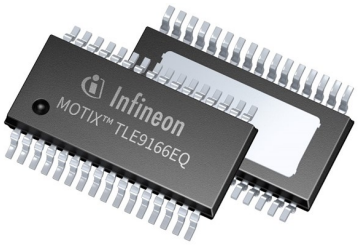
Board page TLE9189QVW

Board page TLE9189QUW

Product overview incl. datasheet link and user manual

OPN	SP Number	Package
TLE9189QVWXUMA1	SP005575961	PG-VQFN-48
TLE9189QUWXUMA1	SP005575958	PG-TQFP-48
EVALKITTLE9189QVWTOBO1	SP006082956	Kit
EVALKITTLE9189QUWTOBO1	SP006082958	Kit

MOTIX™ TLE9166 for door control



MOTIX™ TLE9166EQ is a powerful, versatile, and adaptable solution for door control modules and zone controllers. The device is optimized for use with the MOTIX™ TLE956x motor system IC (SBC) family.

Combination of TLE9166 and TLE956x offers high configurability and advanced features to address different loads. The chipset provides the scalability required to adapt to various system architectures, such as door control modules (DCU), front drives rear (FDR), and zonal applications (ZCU).

Features

- TLE9166 integrates: 6 half-bridges, max. 6 high-side switches, 1 LDO for off-board sensor, 2 MOSFET drivers for electrochromic mirror and mirror heater
- Range 5.5 V – 20 V (ext. 40 V)
- 6 internal PWM
- Configurable slew rate
- 25 kHz PWM capable
- Current monitoring
- SPI interface
- Timeout watchdog

Competitive advantage

- In combination with MOTIX™ TLE956x motor system ICs (SBC) MOTIX™ TLE9166EQ for door control represents a unique chip-set in the market - a flexible solution for door control modules to drive several loads. This solution enables PCB space savings and a very good thermal performance. What truly differentiates this product from competition is the scalability potential to be used in different architectures

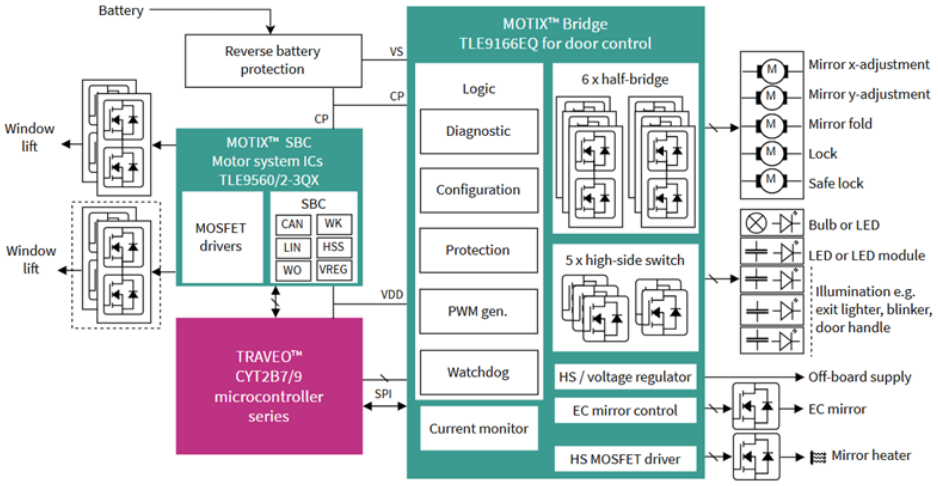
Benefits

- High configurability and detailed diagnostics
- Compact solution and INC bulbs with IC
- High-side switches for LED module control
- Scalable module integration for ZCU

Target applications

- Classic door modules - 1 mod. per door (DCU)
- Front drives rear door modules (FDR)
- Door zone controller (ZCU)
- TLE9166EQ is perfectly suited for the following loads in door modules:
  - Door lock and safe lock
  - Mirror fold and angle adjustment
  - Mirror heating
  - Electrochromic mirror
  - Incandescent bulb and LEDs

Block diagram



Product collaterals / Online support

Product page

Board page

Product overview incl. datasheet link and user manual

OPN	SP Number	Package
TLE9166EQXUMA1	SP005422955	PG-TSDSO-32
TLE9166EQEVALBOARDTOBO1	SP006008054	Kit

EasyPACK™ 3B 1200 V, 500 A 3-level NPC2 IGBT module with TRENCHSTOP™ IGBT H7 F3L500R12W3H7_H20

EasyPACK™ 3B modules in three-level NPC2 topology featuring the latest developed 1200 V TRENCHSTOP™ IGBT H7 and Emcon 7 technologies.

The module is equipped with high current PressFit pin contact technology and NTC. It is optimized for energy storage application and is a perfect fit for 1000 VDC 100 kW power conversion system design.

Features

- Easy family with 12 mm height
- Very low stray inductance
- Overload capabilities up to 175°C
- Low $V_{ce,sat}$
- Humidity ruggedness
- High current pin

Benefits

- Easy to design
- Increased power density
- Best cost-performance with reduced system costs

Competitive advantage

- Reduced system costs
- Easy to design product
- High degree of freedom for inverter and boost design
- Highest power density

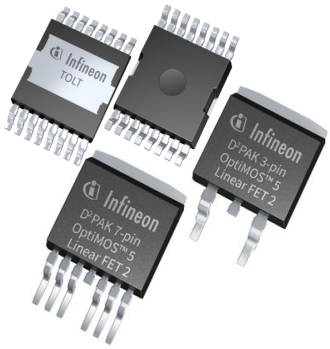
Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
F3L500R12W3H7H20BPSA1	SP005972308	AG-EASY3B-7011

OptiMOS™ 5 Linear FET 2 100 V



The OptiMOS™ 5 Linear FET 2 is now available in D²PAK 3-pin, 7-pin, and TOLT packages, representing the latest addition to Infineon's 100 V portfolio. This product family offers the lowest $R_{DS(on)}$ and a wide safe operating area (SOA), ensuring high robustness for fault protection, such as inrush current or short circuit protection, while enabling high power density and efficiency. It is ideal for applications like hot-swap in servers, telecom, AI servers, and battery protection in battery management systems (BMS).

The D²PAK 3-pin and 7-pin packages address a wide range of footprints, while the TOLT package, being the first top-side cooled option, enables higher power designs in space-constrained environments.

Features

- Wide safe operating area (SOA)
- Low $R_{DS(on)}$
- Lower leakage current compared to Linear FET
- Optimized transfer characteristic

Benefits

- Rugged linear mode operation
- Low conduction losses
- Improved gate driver compatibility
- Better current sharing when paralleling

Competitive advantage

- Robustness against harsh application conditions
- High efficiency and power density
- More MOSFETs per gate driver
- High reliability and power density

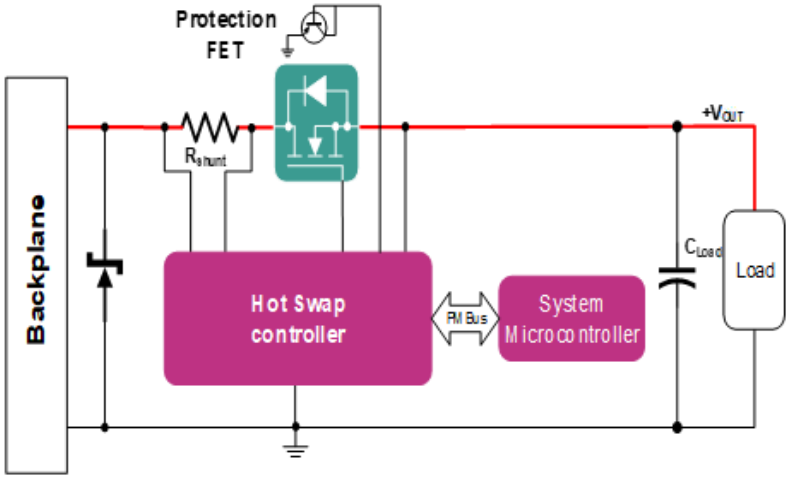
Target applications

- Hot-swap in telecom and server and AI server
- BMS in a wide variate of applications

Product collaterals / Online support

Product family page

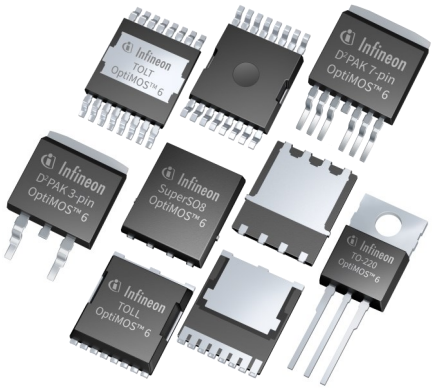
Block diagram



Product overview incl. datasheet link

OPN	SP Number	Package
IPB021N10NM5LF2ATMA1	SP006046460	PG-TO263-3
IPF018N10NM5LF2ATMA1	SP006046471	PG-TO263-7
IPTC017N10NM5LF2ATMA1	SP006046450	PG-HDSOP-16

OptiMOS™ 6 power MOSFET 150 V



The new OptiMOS™ 6 150 V technology was designed to fulfill the requirements of various applications, from telecom and server SMPS to eForklifts and LEVs, as well as solar optimizers and high-power USB chargers.

With industry's lowest $R_{DS(on)}$, improved switching performance and excellent EMI behavior, OptiMOS™ 6 150 V enables unparalleled efficiency, power density and reliability with significant improvements versus its predecessor OptiMOS™ 5.

The portfolio extension brings additional $R_{DS(on)}$ granularity for right-fit products and price competitiveness when offering alternatives to competition and to Infineon's legacy 150 V products.

Features

- $R_{DS(on)}$ up to 41% lower than OptiMOS™ 5
- FOM_g 20% lower than OptiMOS™ 5
- FOM_{gd} 17% lower than OptiMOS™ 5
- Industry's lowest Q_{rr} in 150 V
- Improved diode softness vs OptiMOS™ 5
- Tight $V_{gs(th)}$ spread of +/-500 mV
- High avalanche ruggedness
- Max T_j of 175°C and MSL1

Target applications

- Light electric vehicles (LEV)
- eForklifts
- Telecom SMPS
- Server SMPS
- Industrial SMPS
- Solar
- USB-PD adapters and chargers
- Power and gardening tools

Benefits

- Enhanced robustness
- Low conduction and switching losses, in hard and soft switching
- Stable operation with improved EMI, less overshoot
- Improved current sharing when paralleling
- Longer lifetime and improved system reliability

Competitive advantage

- Price-performance leader, targeting both drives and SMPS applications
- Unmatched performance, with best-in-class $R_{DS(on)}$ and FOM_g
- Integrated fast body diode for industry's lowest Q_{rr} and improved diode softness
- Tight $V_{gs(th)}$ spread of +/-500 mV for improved paralleling capability

Product collaterals / Online support

Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
IPB038N15NM6ATMA1	SP006055087	PG-TO263-3
IPB051N15NM6ATMA1	SP006055077	PG-TO263-3
IPB057N15NM6ATMA1	SP006113144	PG-TO263-3
IPB085N15NM6ATMA1	SP006055057	PG-TO263-3
IPF036N15NM6ATMA1	SP006055096	PG-TO263-7
IPF048N15NM6ATMA1	SP006055080	PG-TO263-7
IPP038N15NM6AKSA1	SP006113151	PG-TO220-3
IPP057N15NM6AKSA1	SP006055071	PG-TO220-3
IPT034N15NM6ATMA1	SP006055099	PG-HSOF-8
IPT047N15NM6ATMA1	SP006055083	PG-HSOF-8
IPTC034N15NM6ATMA1	SP006055102	PG-HDSOP-16
ISC165N15NM6ATMA1	SP006055021	PG-TDSON-8

StrongIRFET™ 2 single N-channel power MOSFET 100 V in D²PAK package

Infineon's StrongIRFET™ 2 power MOSFET 100 V features low $R_{DS(on)}$ of 3.5 mΩ, addressing a broad range of applications from low- to high-switching frequency. Additionally it is intended as the better price performance product compared to the IPB042N10N3 G.

Features

- Broad availability from distribution
- Excellent price/performance ratio
- Ideal for high and low switching frequency
- Industry standard through-hole package
- High current rating
- Capable of wave-soldering

Benefits

- Multi-vendor compatibility
- Right-fit products
- Supports a wide variety of applications
- Standard pinout for drop-in replacement
- Increased current carrying capability
- Ease of manufacturing

Target applications

- Power Management (SMPS)
- Adapter
- Motor drives
- Battery powered applications
- Battery management
- UPS
- Light electric vehicles

Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
IPB035N10NF2SATMA1	SP006048541	PG-TO263-3

StrongIRFET™ 2 single N-channel power MOSFET 100 V in TO-220 package

Infineon's StrongIRFET™ 2 power MOSFET 100 V features low $R_{DS(on)}$ of 3.0 mΩ, addressing a broad range of applications from low- to high-switching frequency. Additionally it is intended as the better price performance product compared to the IRF100B201.

Features

- Broad availability from distribution
- Excellent price/performance ratio
- Ideal for high and low switching frequency
- Industry standard through-hole package
- High current rating
- Capable of wave-soldering

Benefits

- Multi-vendor compatibility
- Right-fit products
- Supports a wide variety of applications
- Standard pinout for drop-in replacement
- Increased current carrying capability
- Ease of manufacturing

Target applications

- Power management (SMPS)
- Adapter
- Motor drives
- Battery powered applications
- Battery management
- UPS
- Light electric vehicles

Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
IPP030N10NF2SAKMA1	SP006048538	PG-TO220-3

StrongIRFET™ power MOSFETs 100 V in TO-247 long leads

The StrongIRFET™ power MOSFET family is ideal for low frequency applications requiring performance and ruggedness. The new TO-247 long lead version offers increased lead length (19.8-20.32 mm) supporting a simplified and reliable soldering process and enables the usage of PCB spacers.

Features

- IRFPW4468PBF
  - High efficiency sync. rectification
  - Uninterruptable power supply
  - High speed power switching
  - 175°C operating temperature
  - Broad availability from distribution partners
  - Hard switched and high frequency circuits
  - Product validation according to JEDEC
- IRF100PW219
  - Very low on-resistance $R_{DS(on)}$
  - Excellent gate charge x R (FOM)
  - Optimized Q_{rr}
  - 175°C operating temperature
  - Product validation according to JEDEC
  - Broad availability from distribution partners

Benefits

- IRFPW4468PBF
  - Improved gate, avalanche ruggedness , fully characterized avalanche SOA
  - Pb-free lead plating; RoHS compliant
  - IEC61249-2-21
- IRF100PW219
  - Reduced conduction losses
  - Ideal for high switching frequency
  - Low overshoot voltage
  - Increased reliability versus 150°C parts
  - Pb-free lead plating; RoHS compliant
  - IEC61249-2-21
  - Standard pinout for drop-in replacement

Competitive advantage

- Version with increased lead length (19.8 - 20.32 mm) supports a simplified and reliable soldering process and enables the usage of PCB spacers

Target applications

- Energy storage systems
- Solar power inverter
- Uninterruptable power supplies (UPS)
- 1-phase string inverter solutions

Product collaterals / Online support

Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
IRFPW4468PBFXKSA1	SP005990634	PG-TO247-3-62
IRF100PW219XKSA1	SP006041520	PG-TO247-3-62

High-side gate driver 1ED21x7 family

Infineon's next generation EiceDRIVER™ 1ED21x7x 650 V, +/- 4 A gate driver ICs offer a more robust, cost-effective solution compared to other industry standard junction-isolated level-shift high-side gate drivers. The 1ED21x7x ICs are high-voltage, high-current and high-speed gate drivers for Si / SiC power MOSFET and IGBT switches. 1ED21x7x can be used in the high-side or low-side configuration. With Infineon's silicon-on-insulator(SOI) technology, 1ED21x7x incorporates excellent ruggedness and noise immunity with capability to maintain operational logic at negative transient voltages up to -100 V. Infineon's technology also enables a very low-ohmic bootstrap diode providing space and cost savings.

1ED21x7x family is ideal for applications needing high current gate drivers for multiple switches in parallel such as light electric vehicles. 1ED21x7x based solution can save multiple NPN/PNP transitions and external bootstrap diodes in one 3-phase system. In other applications requiring totem-pole PFC, inductor over-current protection can be a challenge to design. 1ED21x7x offers an simple, easy-to-design inductor overcurrent protection.

Features

- Infineon thin-film-SOI-technology
- Maximum blocking voltage +650 V
- Output source/sink current +4 A / -4 A
- Maximum supply voltage of 25 V
- Integrated ultra-fast, low $R_{DS(ON)}$ Bootstrap diode
- Negative VS transient immunity of 100 V
- Detection of over current and under voltage supply
- Multi-function RCIN / Fault / Enable (RFE) with programmable fault clear time
- Less than 100 ns propagation delay
- DSO-8 package
- RoHS compliant

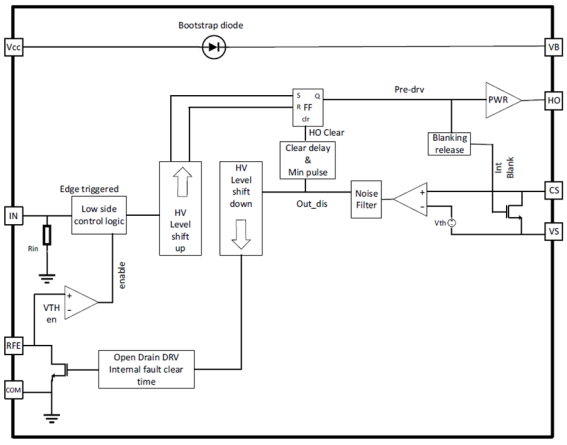
Benefits

- Latch-up free
- Negative VS transient immunity of 100 V
- High voltage spike immunity
- Strong output power level
- Features integration in one single device
- Voltage and current monitoring

Competitive advantage

- High system reliability
- Easy to design product
- Reduced system costs
- System fault protection

Block diagram



Target applications

- Forklift
- LEV
- Battery disconnect
- High Power
- Drives

Product collaterals / Online support

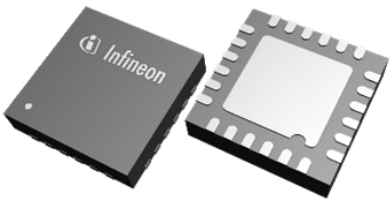
Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
1ED2127S65FXUMA1	SP005826769	PG-DSO-8
1ED21271S65FXUMA1	SP005826767	PG-DSO-8
1ED2147S65FXUMA1	SP005826771	PG-DSO-8
1ED21471S65FXUMA1	SP005826773	PG-DSO-8

BGAP3D30H pre-driver: high-power pre-driver for wireless infrastructure

The BGAP3D30H is a stand-alone packaged two-stage pre-driver amplifier. It is designed to be used in a TX lineup of a base station radio unit as a pre-driver for the Doherty power amplifier. The BGAP3D30H is equipped with a tunable bias circuitry controlled by an external resistor. This enables the optimization of the balance between linearity and power consumption in the target application. The input is 100 Ω differential, and the output is 50 Ω single-ended.



Features

- Supply voltage 5 V
- Gain flatness: ≤ 0.35 dB
- High gain: 38.5 dB
- High OP1dB: 31 dBm
- Frequency range: 3.1 to 4.2 GHz
- Differential input and single-ended input interface
- Internally matched to 50 Ω

Benefits

- BiCMOS technology for an optimized performance
  - BiCMOS facilitates optimized performance and enhanced power efficiency
- High gain and high power: 31 dBm P1dB and 38.5 dB gain
  - Minimum number of components in TX line-up, and low variation over process, voltage and temperature
- Wide bandwidth covers 3.1 - 4.2 GH
  - ≤ 0.35 dB gain flatness in 100 MHz band for simplified compensation
- Internal matching: no need for external matching components
  - Fewer external components, saving PCB area and cost
- Tunable linearity performance
  - This optimizes the balance between linearity and power consumption in the target application

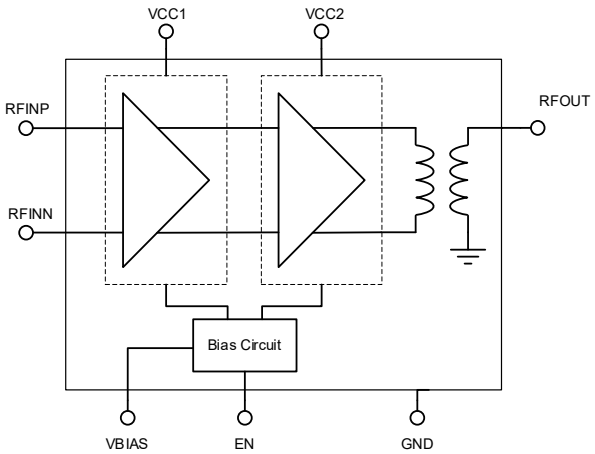
Product collaterals / Online support

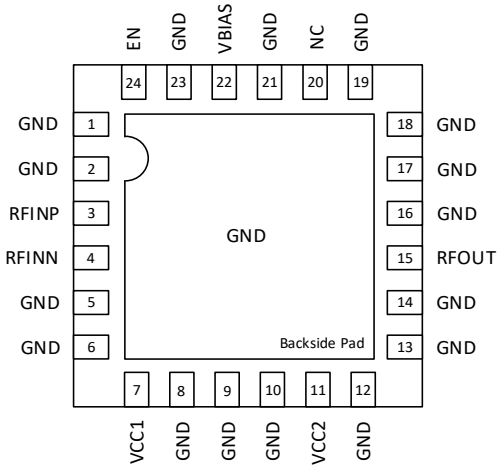
Product page

Target applications

- 5G massive MIMO
- Small cells
- Base stations
- Distributed antenna systems

Block diagram

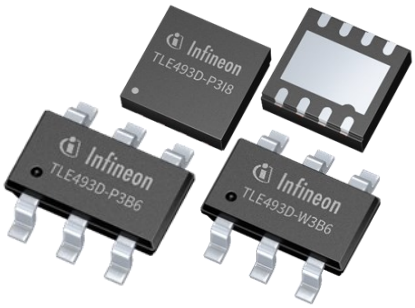




Product overview incl. datasheet link

OPN	SP Number	Package
BGAP3D30HE6327XUMA1	SP005952328	PG-VQFN-24

XENSIV™ – 3D magnetic Hall sensor family TLE493D-X3XX



Infineon's new generation 3D magnetic Hall sensor family for a wide range of automotive, industrial and consumer applications.

The new sensor family is developed according to ISO 26262 and provides built-in diagnosis functions to support functional safety applications up to ASIL B. They measure the magnetic field in three orthogonal dimensions and operates as I²C or SPI bus slave. Customer benefits from the component reduction due to 3D magnetic measurement principle, also the platform adaptability due to device configurability.

Features

- Operating supply voltage 3.3 V and 5 V
- ISO 26262 SEooC for safety requirements up to ASIL B
- 3D magnetic field sensing of ±50, ±100 and ±160 mT.
- Enables low power applications.
- Integrated temperature measurement.
- Operating temperature range T_j = -40°C to 150°C.

Benefits

- Component reduction due to 3D magnetic measurement principle.
- Wide application range addressable due to high flexibility
- Platform adaptability due to device configurability
- Very low system power consumption due to wake up mode

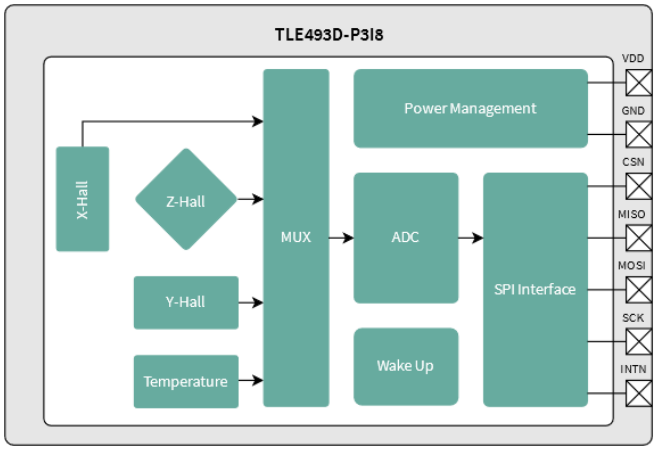
Competitive advantage

- Best cost-performance ratio
- Small footprint
- Functional safety compliance (ISO 26262-compliant)

Target applications

- Automotive control elements (infotainment, navigation, seats, air-condition, …)
- Top column modules (direction indicator, wiper control, etc.)
- E-Shifter / gear selector
- Joysticks
- Robotics

Block diagram



Product collaterals / Online support

Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
TLE493DP3I8XTMA1	SP005633649	PG-VSON-8
TLE493DW3B6B0HTSA1	SP005952965	PG-TSOP6-6
TLE493DW3B6B1HTSA1	SP005952969	PG-TSOP6-6
TLE493DW3B6B2HTSA1	SP005952973	PG-TSOP6-6
TLE493DW3B6B3HTSA1	SP005952977	PG-TSOP6-6
TLE493DP3B6A0HTSA1	SP005427119	PG-TSOP6-6
TLE493DP3B6A1HTSA1	SP005427121	PG-TSOP6-6
TLE493DP3B6A2HTSA1	SP005427123	PG-TSOP6-6
TLE493DP3B6A3HTSA1	SP005427125	PG-TSOP6-6

XENSIV™ – KP465 air pressure sensor

The KP465 is individually calibrated and temperature compensated, reducing the software complexity by providing a direct readout of the pressure and the temperature. KP465 supports a fast startup time less than 5 ms, high accuracy of up to 3 kPa and different sensitivities. Combined with the wide operating temperature range of -40°C to +125°C, high ESD robustness, and excellent EMC performance, the KP46x sensors are perfectly suited to the harsh environmental conditions prevalent in automotive and industrial applications.

Features

- High accuracy pressure sensing up to +/-3 kPa
- Integrated temperature sensor
- Pressure range from 60 to 320 kPa
- Wide operating temperature range from -40°C to 125°C
- Low current consumption to 3.5 mA
- Digital SPI Interface

Benefits

- Robust system and high-quality solution
- Lowered power use to boost efficiency
- Robust sensor failure detection
- Optimal setup for application needs

Competitive advantage

- Fast startup time less than 5ms
- High accuracy of up to 3 kPa and different sensitivities.
- Combined with the wide operating temperature range of -40°C to +125°C, high ESD robustness
- Excellent EMC performance, perfectly suited to the harsh environmental conditions

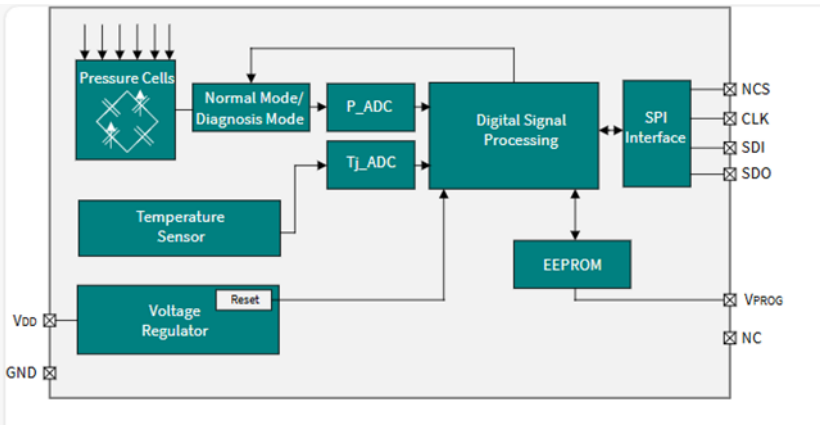
Target applications

- Barometric air pressure sensor
- Fuel cell: air-side module pressure control
- Expand BAP portfolio for high-pressure use

Product collaterals / Online support

Product page

Block diagram



Product overview incl. datasheet link

OPN	SP Number	Package
KP465XTMA1	SP005430040	PG-DFN-8

CoolSET™ 5G QR PLUS boards

Introducing Infineon's latest range of CoolSET™ 5th generation quasi-resonant PLUS reference boards, designed to enhance efficiency and robustness across various applications. This product launch includes four new reference designs: a 15 W board featuring the ICE5QR4780BG-1, a 24 W board powered by the ICE5QR2280BG-1, a 27 W board with the ICE5QR1680BG-1, and a 42 W board based on the ICE5QR0680BG-1. Each board operates under a universal input range of 85 ~ 300 V_{AC} at 50/60 Hz, delivering dual outputs of 12 V and 5 V with varying current capacities to suit different power requirements. These reference boards are engineered to provide reliable performance even in unstable grid environments, ensuring a versatile solution for a wide range of power conversion needs.

Features

- Universal input: 85 ~300 V_{AC}, 50/60 Hz
- Output 1: 12 V
- Output 2: 5 V
- Output current 2: 0.2 A

Benefits

- Robust operation
- Digital frequency reduction
- Programmable burst mode
- Integrated 800 V MOSFET

Target applications

- AC-DC power conversion for telecom infrastructure
- Heating, ventilation, and air conditioning (HVAC)
- Home appliances
- Refrigerators and freezers

Product collaterals / Online support

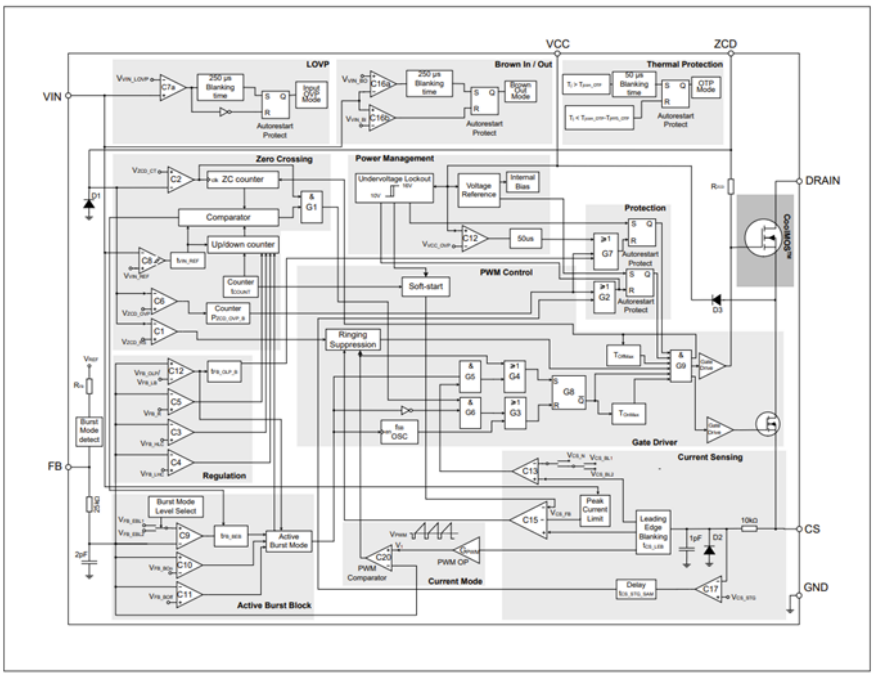
Board page REF_5QR4780BG-1_15W1

Board page REF_5QR2280BG-1_24W1

Board page REF_5QR1680BG-1_27W1

Board page REF_5QR0680BG-1_42W1

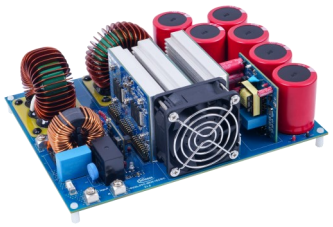
Block diagram



Product overview incl. application notes link

OPN	SP Number
REF5QR4780BG115W1TOBO1	SP006089408
REF5QR2280BG124W1TOBO1	SP006089416
REF5QR1680BG127W1TOBO1	SP006089418
REF5QR0680BG142W1TOBO1	SP006089420

Evaluation board EVAL-1EDSIC-PFC-5KW



Nowadays, the increasing number of electronic devices is challenging the electric grid, causing distortion and threatening the stability and efficiency of power supply systems.

To address this, advanced power factor correction (PFC) circuitry is required in power supply designs. PFC ensures a high-power factor by synchronizing the input current and voltage waveforms.

By using PFC, power supply systems can reduce distortion and maintain a stable and efficient supply of power.

EVAL-1EDSIC-PFC-5KW is a complete system solution for a 5kW interleave totem pole PFC (Power Factor Correction). The totem pole PFC stage features EiceDRIVER™ 1ED21271S65F and CoolSiC™ MOSFET IMBG65R022M1H. Test results show 98.7% at 230 V_{AC} half load.

Features

- Interleaved totem pole design with CoolSiC and CoolMOS, driven from level shifter drivers 1ED21271
- Hardware shoot through protection for high side power switch
- CCM totem pole PFC
- Improved performance and robustness

Benefits

- High efficiency 97.8% at half load
- Operates on 100 - 240 V power lines
- Fixed 400 V Output DC voltage
- Peak current limit 50 A

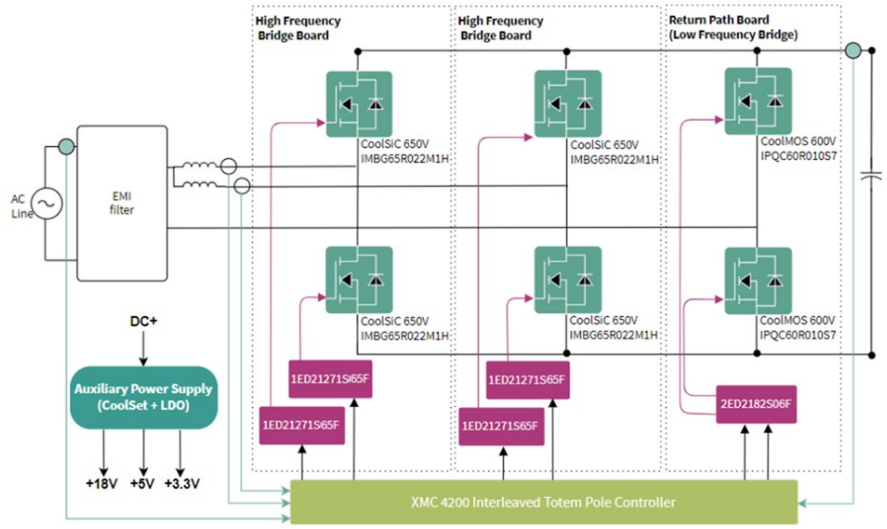
Competitive advantage

- Use of high side driver integrated protection
- Fast action for shoot through protection
- Innovative PFC stage design

Target applications

- Heating ventilation and air conditioning (HVAC)
- Home appliances
- Power conversion system
- General purpose driver

Block diagram



Product collaterals / Online support

Board page

Product overview incl. user manual link

OPN	SP Number
EVAL1EDSICPFC5KWTOBO1	SP006121523

REF_48V_270W_EBIKE: compact motor drive inverter for e-bikes

Key success factors for e-bikes and similar micromobility applications include aesthetics, compact system design and by extension, high power density. This functional 48 V e-bike traction inverter built on a FR4 PCB in an ultra-small form-factor that can fit in most bicycle tubes achieves all of these goals. The board specs follow the EN15194:2017 standard for e-bikes, delivering 250 W of continuous power and also up to 1 kW of peak power. A dedicated Field Oriented Control (FOC) software package for motor control is available with the board completing the system offering and thereby cutting down time-to-market for customers.

Features

- Small size utilizing 3x3 mm^2 MOSFETs
- 250 W output power following EN15194:2017
- Hall based FOC
- FW adapted to e-bike use case
- Utilizing 6EDL7151 for reduced BOM
- Protection features of 6EDL7151
- Plug-and-play solution

Benefits

- Ready for customer implementation
- Optimized BOM reference design
- Enables electrification kits
- Cost reduction

Competitive advantage

- Ultra-small form-factor enabling placement of inverter board inside 30 mm diameter bicycle frame
- Offers analog and PC-based control options
- Gate driver switching properties are adjusted based on radiated emissions measurements, ensuring compliance with strict EMI criteria and minimal interference in final system implementation

Target applications

- Micromobility
- Light electric vehicles (LEV)
- E-bikes

Product collaterals / Online support

Board page

Product overview incl. application notes link

OPN	SP Number
REF48V270WEBIKETOBO1	SP006093891