MICROCONTROLLER

XMC5000 Industrial Microcontroller Arm® Cortex®-M4F

PSOC™ Automotive 4000S – 40 QFN package

PSOC™ Automotive 4100S Plus – 48 QFN package

POWER

OptiMOS™ 6 power MOSFETs in 60 V

OptiMOS™ 7 switching optimized power MOSFETs in 25 V for AI datacenter, server and telecom

PROFET™ Wire Guard 12 V BTG70008A-1ESW Automotive eFuse

62 mm 1200 V IGBT7 portfolio extension

OptiMOS™ 7 power MOSFETs in 80 V and 100 V

EVALUATION BOARDS

EVAL-1ED3012MC12I-SIC half-bridge for gate driver ICs

EVAL-1ED3321MC12N-SIC half-bridge for gate drivers and power switches

EVAL-FP50R12W2T7 with EasyPIM™ 2B for general purpose drives

XMC5000 Industrial Microcontroller Arm® Cortex®-M4F

The XMC5000 MCU features an Arm® Cortex®-M4F at 160 MHz, a memory spectrum up to 2 MB flash, up to 256 KB SRAM, and an Arm® Cortex®-M0+ dedicated to cryptography. It supports power input supply from 2.7 V to 5.5 V, scalable packaging up to 144 pins, and low power modes. With scalability to XMC7000 and ModusToolbox™ support, XMC5000 ensures robustness in harsh environments, offering advanced security and safety features.

Features

- Dual-Core Architecture:
  - Arm Cortex®-M4F (up to 160 MHz): high-performance processing for complex tasks and motor control
  - Arm Cortex®-M0+ (up to 100 MHz): efficient handling of peripheral and security functions
- 2.7 – 5.5 V Supply Capability:
  - Unique support for seamless integration into existing 3.3 and 5 V systems
- Advanced I/O and ADCs:
  - Up to 122 programmable I/Os
  - 3x SAR ADCs for versatile motor control and industrial applications
- Scalable and Safe:
  - 7 different memory and package combinations, from 64 to QFP-144
  - Class-B and SIL-2 certifications for enhanced reliability

Benefits

- Adaptive Design
  - Flexible power supply (2.7 V to 5.5 V)
  - Scalable to XMC7000 with 64-144-pin QFP packages
  - Ensures seamless integration into existing systems and future proofing
- System Efficiency
  - Dual-core architecture (Cortex-M4F with FPU and M0+ taking care secondary tasks and security)
  - Up to 2 MB flash
  - Up to 144-QFP package
  - 3x SAR ADCs with parallel operation
- Reliable Operation
  - Class-B and SIL-2 certifications
  - Security features
  - Ambient temperature up to 125°C
    - Provides dependable performance in harsh environments while maintaining cost effectiveness

Competitive advantage

- Adaptive design: enables drop-in replacement and easy platform reuse
- System efficiency: offloads housekeeping and security to second core
- Reliable operation: ensures dependable performance in harsh environments
- Energy-savvy power architecture: enables granular domain control, boosting runtime in energy-critical applications
- Versatile resources: provides headroom for advanced control

Target applications

- Home Appliances: precise control and energy efficiency
- Motor Control: high-resolution timers and SAR ADCs ensure precise control
- HVAC Systems: reliable operation in harsh environments with scalable I/Os
- Power Tools: efficient processing and low power modes optimize energy use

Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
XMC5200F100K1088AAXQLA1	SP006109765	PG-LQFP-100
XMC5300F100K2112AAXQLA1	SP006156894	PG-LQFP-100
KITXMC52EVKTOBO1	SP006151448	LG-MADK-1

PSOC™ Automotive 4000S – 40 QFN package

The PSOC™ Automotive 4000S family is the starter family of the PSOC™ 4-S series. It introduces Infineon's fourth-generation CAPSENSE™, smart I/Os to implement pin-level digital logic, and the 32-bit Arm® Cortex®-M0+ for all your mixed-signal embedded requirements.

Features

- AEC-Q100 qualified
- 48 MHz Arm® Cortex®-M0+ CPU
- Up to 32 KB of flash
- Up to 4 KB of SRAM
- Operating voltage: 1.71 V - 5.5 V
- 4th Gen CSD capacitive sensing
- LCD segment drive capability - GPIO
- Single-slope 10-bit ADC

Benefits

- Reliable for in-vehicle application
- 40-QFN package saves PCB space with good thermal performance
- Robust HMI even with water/dust
- Flexible analog + digital peripherals support sensor, interface and actuator control
- Low power operation great for always-on automotive modules

Competitive advantage

- Highly configurable mixed-signal blocks
- One chip can handle many functions reducing BOM and offering design flexibility
- Strong touch/HMI capabilities with 4th Gen Capsense™
- Automotive and harsh environment readiness
- Low power modes + broad voltage inputs which are good for battery powered, sensor or standby modules
- Small package footprint (40-QFN wettable flank) with PCB space savings

Target applications

- Center information display (CID)
- Heating ventilation and air conditioning (HVAC)

Product collaterals / Online support

Product page

Product overview incl. datasheet link

OPN	SP Number	Package
CY8C4045LQES413XQLA1	SP005911956	PG-VQFN-40

PSOC™ Automotive 4100S Plus – 48 QFN package

PSOC™ Automotive 4100S Plus extends the PSOC™ 4 S Series and is a combination of a microcontroller with standard communication and timing peripherals, a capacitive touch-sensing system (CAPSENSE™) with best-in-class performance, programmable general-purpose continuous-time and switched-capacitor analog blocks, and programmable connectivity.

Features

- 48-MHz Arm® Cortex®-M0+ CPU
- AEC-Q100 qualified
- Up to 38 programmable GPIO pins
- Up to 128 KB flash/16 KB of SRAM
- 8-channel DMA engine
- 12-bit up to 1 Msps SAR ADC
- CAN 2.0B block
- LCD drive capability on GPIO

Benefits

- It uses a 48 MHZ Arm Cortex M0+ core, delivering solid compute performance for automotive applications while keep power consumption lower
- It is AEC-Q100 qualified making it robust for vehicle environments
- It integrates rich mixed signal features: a 12 -bit,1Msps SAR ADC, programmable op-amps/comparator and flexible analog blocks- helpful for sensor and body electronics tasks

Competitive advantage

- Giving strong performance in a compact footprint
- Its rich mix of programmable analog and digital blocks allows significant system integration and supports mixed-signal sensor interface
- Advance capacitive touch (CAPSENSE 4th gen) with water tolerance and high noise immunity enables robust HMI designs in automotive environments
- Flexible I/O’s and connectivity enables wide range of automotive nodes roles

Target applications

- Heating ventilation and air conditioning (HVAC)
- Automotive head unit
- Automotive instrument cluster
- Roof control module

Product collaterals / Online support

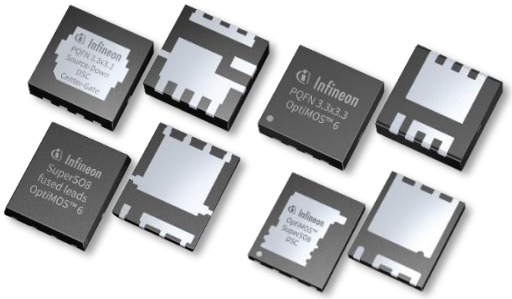
Product page

Product overview incl. datasheet link

OPN	SP Number	Package
CY8C4147LDES473XQLA1	SP005911944	PG-VQFN-48

OptiMOS™ 6 power MOSFETs in 60 V

OptiMOS™ 6 60 V is the latest power MOSFET technology, setting the new industry standard for benchmark performance. Compared to its predecessor, OptiMOS™ 5, Infineon's latest wafer technology offers significant performance improvement, including > 37% lower $R_{DS(on)}$ and ~25% improved FOMQg x $R_{DS(on)}$. These improvements lead to higher system efficiency and power density in soft-switching topologies and low-frequency applications.



Features

- > 37% less $R_{DS(on)}$ vs OptiMOS™ 5 in SSO8
- High-performance silicon technology
- 175°C rated
- Industrial qualification
- Ideal for soft-switching applications

Benefits

- Lower conduction losses than OptiMOS™ 5
- Lower switching losses than OptiMOS™ 5
- Improved performance efficiency
- Superior power handling capability
- Robust reliable performance

Product collaterals / Online support

Product family page

Target applications

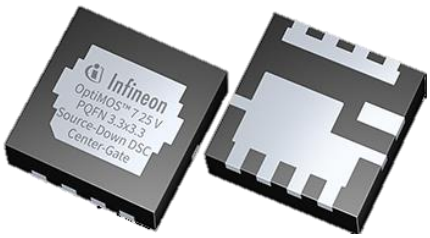
- DC-DC Power Conversion
- Server Power Supply Units
- Telecom Infrastructure
- Battery Management Systems
- Low-Frequency Drives

Product overview incl. datasheet link

OPN	SP Number	Package
ISC007N06LM6ATMA1	SP005570308	PG-TSON-8
ISC007N06NM6ATMA1	SP005570350	PG-TSON-8
ISC008N06LM6ATMA1	SP005570789	PG-TDSON-8
ISC009N06NM6SCATMA1	SP006055871	PG-WSON-8
ISC025N06LM6ATMA1	SP005570312	PG-TDSON-8
ISZ023N06LM6ATMA1	SP006010859	PG-TSDSON-8
ISZ072N06NM6ATMA1	SP006010858	PG-TSDSON-8

OptiMOS™ 7 switching optimized power MOSFETs in 25 V for AI datacenter, server and telecom

Expanding the recently launched OptiMOS™ 7 25 V portfolio with two new best-in-class devices, Infineon is further boosting performance for data centers, servers, AI, and more. The portfolio features two technology flavors: products optimized for hard-switching (offering an excellent Miller ratio, FOMs, and $R_{DS(ON)}$) and soft-switching topologies (offering ultra-low $R_{DS(ON)45}$ and $FOMQ_g$).



Features

- Hard- and soft-switching optimizations
- Hard-switching opt.: Miller ratio,FOM,$R_{DS(ON)}$10
- Soft-switching opt.: $R_{DS(ON)}$45, FOMQg
- +175°C junction temperature rating
- Source-down package
- Center-gate footprint, DSC and overmolded

Benefits

- Application-specific optimization
- Improved performance and efficiency
- Advanced induced turn-on ruggedness
- Reduced driver and switching losses
- Reduced conduction losses
- Increased reliability and power density
- Superior thermal capabilities
- Reduced package parasitics

Competitive advantage

- Dedicated power MOSFETs optimized for hard- and soft-switching topologies
- Best-in-class $R_{DS(on)}$ and FOMs
- Excellent Miller ratio for robust switching and ease of use
- Improved reliability with temperature rating of +175°C
- Superior thermal capabilities with Source-Down package

Target applications

- AI data center
- 48 V intermediate bus conversion
- Server PSU
- Telecom
- Datacom

Product collaterals / Online support

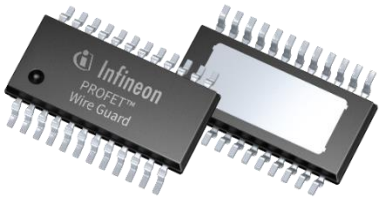
Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
IQEH46NE2LM7UCGSCATMA1	SP005964802	PG-WHTFN-9
IQEH42NE2LM7ZCGSCATMA1	SP006008740	PG-WHTFN-9

PROFET™ Wire Guard 12 V BTG70008A-1ESW
Automotive eFuse

The single-channel automotive eFuse BTG70008A-1ESW, member of the PROFET™ Wire Guard family, is designed for wire protection in modern automotive E/E architectures. It is equipped with embedded I²t wire protection, and enhanced diagnostic capabilities. Its adjustable overcurrent protection threshold ensures fast failure isolation towards power supplies and the automatic idle mode reduces the current consumption to ~ 50 µA during parking.



Features

- > $R_{DS(on)}$ of 0.9 mΩ (typical)
- > Load Current 36.5 A
- > Automotive eFuse with embedded wire protection
- > Selectable integrated I²t protection
- > Adjustable overcurrent threshold
- > Capacitive load switching mode

Benefits

- > Precise application diagnostics
- > Dynamic load control during parking
- > Automatic Idle mode at ~ 50 µA
- > Fast, safe charging of big capacitors
- > Pin and footprint compatibility
- > ISO 26262-compliant

Competitive advantage

- > Highly precise I²t wire protection with integrated wire matching based on thermal wire model
- > integrated automatic Idle mode
- > compatible family approach
- > ISO 26262-compliant development
- > Smaller than existing Gate Driver plus MOSFET solution

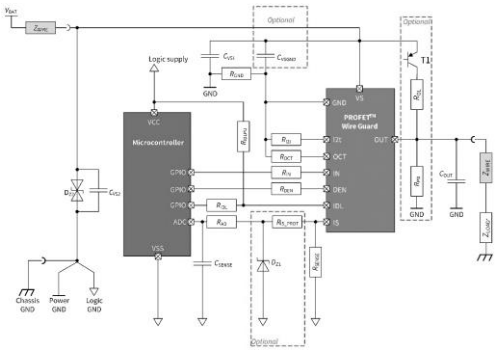
Target applications

- > Wire protection
- > Zone control unit
- > Automotive primary power distribution unit
- > Automotive secondary power distribution unit
- > Software defined vehicles
- > Fuse and relay replacement

Product collaterals / Online support

Product page

Block diagram



Product overview incl. datasheet link

OPN	SP Number	Package
BTG70008A1ESWXUMA1	SP005971464	PG-TSDSO-24

62 mm 1200 V IGBT7 portfolio extension

Introducing 62 mm half bridge modules in 1200 V from 450 A up to 800 A with pre-applied thermal interface material and common emitter configuration.

Features

- Highest power density
- Best-in-class VCEsat
- Tvj op = 175°C overload
- High creepage & clearance distances
- Isolated base plate
- Standard housing
- RoHS compliant
- 4 kV AC 1 min insulation
- Package with CTI > 400
- UL/CSA certif. with UL1557 E83336

Benefits

- Higher current capability
- For NPC2 in 3-level configuration
- Highest power density
- Avoidance of paralleling of IGBT modules
- Reduced system costs
- Highest reliability

Competitive advantage

- Scalability: easy paralleling of 62 mm modules
- Robustness: screw main terminals and high creepage and clearance distances
- Commercial: attractive price – performance ratio for system operator, high level of market acceptance

Target applications

- Battery energy storage (BESS)
- General purpose motor drive
- Central inverter solutions
- Uninterruptible power supplies (UPS)

Product collaterals / Online support

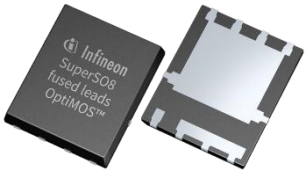
Product family page

Product overview incl. datasheet link

OPN	SP Number	Package
FF800R12KE7PHPSA1	SP005589679	AG-62MMHB-711
FF800R12KE7PEHPSA1	SP005589673	AG-62MMHB-711
FF600R12KE7PHPSA1	SP005589932	AG-62MMHB-711
FF600R12KE7PEHPSA1	SP005589937	AG-62MMHB-711
FF450R12KE7PHPSA1	SP005746560	AG-62MMHB-711
FF450R12KE7PEHPSA1	SP005724014	AG-62MMHB-711

OptiMOS™ 7 power MOSFETs in 80 V and 100 V

OptiMOS™ 7 80 V and 100 V, featuring the latest Infineon technology, sets a new industry standard by delivering the perfect balance of power efficiency, performance, and cost effectiveness. With substantially improved Figures of Merit compared to previous generations, OptiMOS™ 7 offers enhanced switching performance and ease of use for designers. A softer body diode further simplifies layouts by reducing voltage overshoot and EMI, while the SuperSO8 package provides a compact, thermally efficient form factor ideal for modern high-performance applications. Perfect for space-efficient, high-efficiency designs in telecom, server, solar, and drive applications.



Features

- Latest Infineon technology setting the new industry standard for providing a perfect balance for power efficiency and performance with cost saving
- > 32% improved FOMs compared to OptiMOS™ 5 in SuperSO8
- Improved switching performance compared to OptiMOS™ 5
- Ease of use, softer body diode

Benefits

- Maximum efficiency with balanced performance and cost savings
- Lower losses for cooler, more reliable operation
- Clean switching for reduced EMI
- Compact package with strong thermal capability
- Easy, streamlined design-in

Competitive advantage

- Best-in-class efficiency from industry-leading FOM
- Superior high-frequency switching performance
- High power density
- Reduced component count through simpler design integration
- Industrial-grade reliability

Target applications

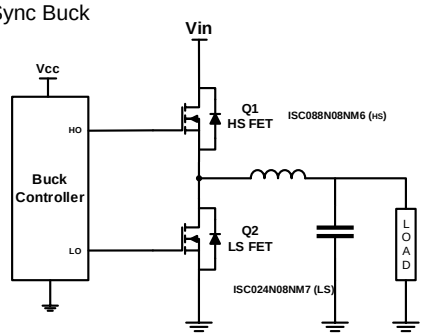
- Server
- Telecom
- Drives
- Solar

Product collaterals / Online support

Product family page

Block diagram

- Sync Buck



Product overview incl. datasheet link

OPN	SP Number	Package
ISC019N08NM7ATMA1	SP006166279	PG-TDSON-8
ISC024N08NM7ATMA1	SP006183896	PG-TDSON-8
ISC034N08NM7ATMA1	SP006167256	PG-TDSON-8
ISC040N10NM7ATMA1	SP006167253	PG-TDSON-8

EVAL-1ED3012MC12I-SIC half-bridge for gate driver ICs

The EVAL-1ED3012MC12I-SiC is an evaluation board for the 1ED3012MC12I gate driver ICs. It is built in a half-bridge configuration with a maximum DC-link voltage of 900 V. It is optimized for easy measurement and flexible adjustment of the gate driving components and the protection features.

Features

- 1ED3012MC12I isolated gate driver ICs
- IMZA120R020M2H 1200 V SiC MOSFETs
- 2EP130R transformer driver IC
- 12.5/13.6 V UVLO protection w/ hysteresis
- For up to 2300 V Switches
- CTI 600 Package with 8 mm creepage
- Pin-to-pin with Opto Devices on Market
- Opto-compatible input

Benefits

- Easy measurement and configuration
- On-board power supply
- Half bridge configuration
- Switches unassembled
- UVLO options for Si, IGBT, SiC

Competitive advantage

- Best-in-class propagation delay of 40 ns
- Strong 6.5 A / 6 A output stage
- Best-in-class CMTI of > 300 kV/µs
- 10 ns max part-to-part prop. delay skew

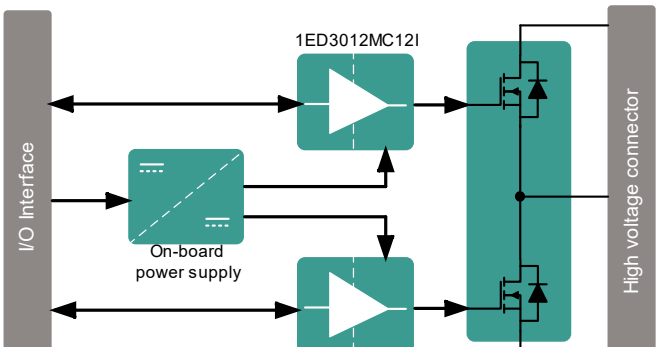
Target applications

- Battery energy storage (BESS)
- EV charging
- DIN rail power supply solutions
- General purpose motor drive
- Photovoltaic
- Motor control

Product collaterals / Online support

Board page

Block diagram

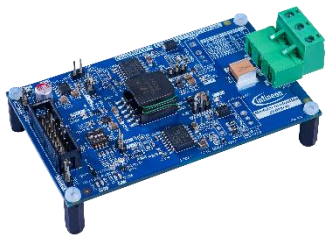


Product overview incl. user guide link

OPN	SP Number	Package
EVAL1ED3012MC12ISICTOBO1	SP006194086	-

EVAL-1ED3321MC12N-SIC half-bridge for gate drivers and power switches

Infineon's EVAL-1ED3321MC12N-SIC evaluation board, part of Modular evaluation platform, simplifies the assessment of EiceDRIVER™ 1ED3321MC12N gate drivers and power switches in half-bridge setups. This board works independently or can be plugged into the EVAL-DCLINK-DPT board to assist design engineers in either measuring parameters or conducting Double Pulse Testing (DPT). Also, it is compatible with other ICs from EiceDRIVER™ 1ED332xMC12N family.



Features

- Single-channel isolated gate driver
- 40 V absolute max. output voltage
- For up to 2300 V Si and SiC switches
- High CMTI > 300 kV/µs
- 11 V/12 V UVLO protection
- 85 ns prop. delay w/ 35 ns input

Benefits

- Board features a CoolSiC™ 1200 V SiC MOSFET G2 (IMZC120R017M2H) and an isolated supply utilizing the 2EP130R transformer driver
- Enables advanced testing capabilities by simply connecting it to the EVAL-DCLINK-DPT board
- Allows for easy measurement and straightforward configuration.
- On-board Power Supply included

Competitive advantage

- Unlock advanced testing instantly—simply connect to the EVAL-DCLINK-DPT board as part of the Infineon Modular Evaluation platform
- Experience efficiency and reliability with integrated CoolSiC™ 1200 V SiC MOSFET (IMZC120R017M2H) and isolated supply (2EP130R)
- Achieve superior protection with precise VCEsat (DESAT) detection
- Rely on exceptional robustness with over 300 kV/µs CMTI in challenging environments

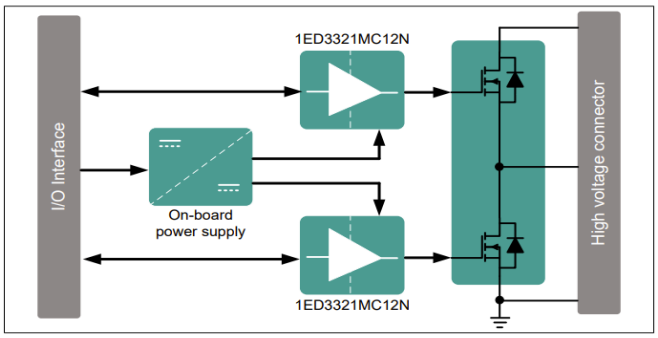
Target applications

- Industrial motor drives and controls
- Photovoltaic
- Uninterruptible power supplies (UPS)
- EV charging
- Servo motor drive and control
- Residential air conditioning
- General purpose motor drive
- 1-phase string inverter solutions
- Battery energy storage (BESS)

Product collaterals / Online support

Board page

Block diagram



Product overview incl. user guide link

OPN	SP Number	Package
EVAL1ED3321MC12NSICTOBO1	SP006206137	-

EVAL-FP50R12W2T7 with EasyPIM™ 2B for general purpose drives

EVAL-FP50R12W2T7M5 with EasyPIM™ 2B is intended for general-purposes drives powered by TRENCHSTOP™ IGBT7. The evaluation board helps investigate the module's behavior with double-pulse testing (DPT) and system tests. In addition to general-purpose drives control, the evaluation board offers high-voltage sensing, phase-current sensing, temperature sensing, protection measures, precise DESAT-detection, and Miller clamping.

Features

- EasyPIM™ with TRENCHSTOP™ IGBT
- 3-phase drive control in one system
- Passive rectification and power supply
- Overtemperature, overcurrent detection
- Isolated internal power supply

Benefits

- Wide range of use
- Multiple test points for debugging
- Various gate voltages
- Compact design with reinforced isolation

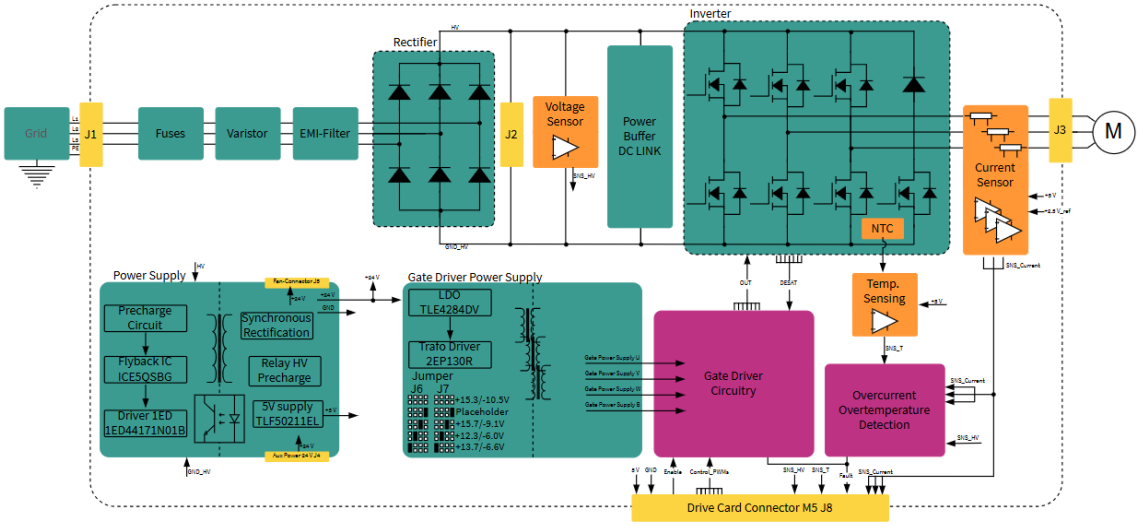
Product collaterals / Online support

Board page

Target applications

- General purpose drives
- Motor drives
- Auxiliary inverters
- Air condition

Block diagram



Product overview incl. user guide link

OPN	SP Number	Package
EVALFP50R12W2T7M5TOBO1	SP006146610	-