# New Product Introduction

## November 2019

HybridPack™ Drive Performance

BGSA143GL10

LITIX™ Basic+ TLD2252-2EP

Multi-MOSFET driver family – TLE92108

PROFET™+2 12 V Shields for Arduino for Heating and Power distribution

40 V StrongIRFET™ in symmetrical, dual SuperSO8

XENSIV™ - New(!) Pressure 2GO kits

Infineon XMC 3-Channels RGB LED Lighting Shield

Infineon XMC1400 ARDUINO kit

650 V high and low current half-bridge SOI gate driver family

1200 V CoolSiC™ discrete MOSFETs M1H portfolio extension

Integrated two-stage PFC + LLC/LCC resonant half-bridge controller

CoolSiC™ MOSFET evaluation board for 7.5 kW motor drive

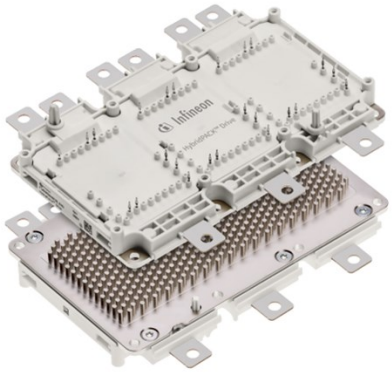
OPTIGA™ TRUST M SLS32AIA

OPTIREG™ - TLS850F2TA V50

OPTIREG™- TLS715B0NA V50

# HybridPack™ Drive Performance

**The HybridPACK™ Drive Family offers 5 variants of power modules for main inverters with the newest two derivates being FS950R08A6P2B (950A/750V) and FS380R12A6T4B (380A/1200 V ).**
**Other product versions include: 660 A /750 V , 770 A /750 V , 820 A /750 V (collector current and blocking voltage).**
**This module has an adapted baseplate structure for different cooling types. Flat baseplate without direct cooling structure, Pinfin for best cooling performance and Wave (Ribbon Bond) for a cost-efficient solution between low and high performance.**
**One gate driver PCB fits all module variants, keeping the same module footprint.**



### Features

- FS950R08A6P2B: 750 V EDT2 IGBT for up to $T_{vj}$ = 175° C switching operation
- FS380R12A6T4B: 1200 V IGBT4 for up to $T_{vj}$ = 175°C switching operation
- Mechanical guiding elements for efficient and cost-saving inverter assembly and press-fit signal pins

### Benefits

- Benchmark IGBT chip with higher density and lower switching losses (FS950R08A6P2B only)
- Very compact and cost efficient inverter designs
- Reuse of existing package technology
- Broad portfolio of modules for different performance classes
- Support easy assembly processes

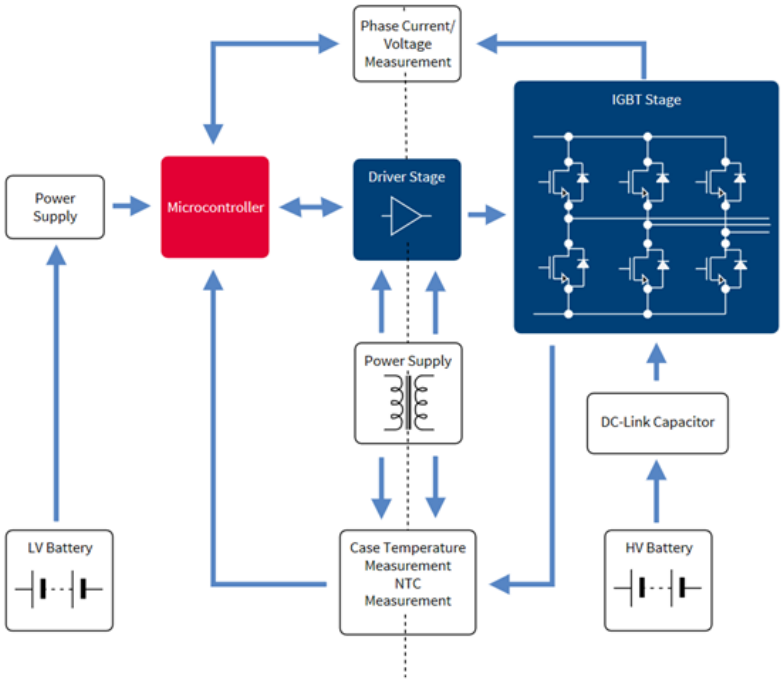
### Target applications

- Main inverter for xEV

### Competitive advantage

- Quality, production capabilities, scalable performance and modular approach for design in

### Block diagram




### Product collaterals / Online support

Product Family page
Product Brief FS950
Product brief FS380
Application note
Application Brochure

### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| FS950R08A6P2BBPSA1 | SP001720776 | AG-HYBRIDD-1-1 |
| FS380R12A6T4BBPSA1 | SP001632438 | AG-HYBRIDD-1-1 |

# BGSA143GL10


**BGSA143GL10 is a small and versatile Single-Pole Quad Throw (SP4T) RF switch optimized for low $C_{OFF}$ as well as low $R_{ON}$ enabling applications up to 6.0GHz. GPIO digital control lines offer the possibility to adopt SP4T, SPDT along with SPST topology for an optimum flexibility in RF Front-end designs.**

**BGSA143GL10 is ideal for high Q tuning applications. This single supply chip integrates on-chip CMOS logic control. It can be driven by 2 or 3 CMOS or TTL compatible control input signals.**

### Features

- Ultra low $R_{ON}$ resistance of 1.15 Ω at each port in ON state
- Low $C_{OFF}$ capacitance of 140 fF at each port in OFF state
- High RF operating peak voltage handling of 42 V in OFF state
- Resonance-Stopper Antenna Tuning
- Low harmonic generation
- 3 GPIO pins control interface
- No RF parameter change within supply voltage range
- Small form factor 1.1 x 1.5 $mm^2$ (MSL1, 260°C per JEDEC J-STD-020)
- RoHS and WEEE compliant package

### Benefits

- Low cross-bands interference
- Minimizes antenna tuning switch losses
- Optimizes antenna efficiency and bandwidth
- Allows multiple selectable switch configurations (SP4T/SP3T/SPDT/SPST)

### Target applications

- High-linearity antenna tuning switching
- RF tuning applications

### Competitive advantage

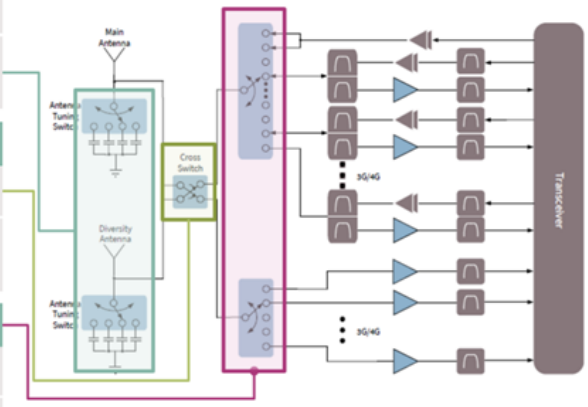
- Eliminates unwanted resonance

## Application Block Diagram for RF Front End in a Mobile Phone

| Antenna Centric Device | |
|---|---|
| Main components | IFX product offering |
| › Antenna tuner | › **BGSA143GL10** |

| Antenna Centric Device | |
|---|---|
| Main component(s) | IFX product offering |
| › Swapping switches | › BGSX Family |

| RF Switches | |
|---|---|
| Main component(s) | IFX product offering |
| › RF Switches | › BGS Family |




### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| BGSA143GL10E6327XTSA1 | SP003713658 | PG-TSLP-10 |

### Product collaterals / Online support

Proudct page

# LITIX™ Basic+ TLD2252-2EP

**Extension product to LITIX™ Basic+ family (7th family member)**

**The LITIX™ Basic+ TLD2252-2EP is a dual channel high-side driver IC with integrated output stages. It is designed to control LEDs with a current up to 120 mA. In typical Automotive applications, the device is capable to drive 3 red LEDs per chain (in total 6 LEDs) with a current up to 100 mA and even above (if not limited by the overall system thermal properties). Practically, the output current is controlled by an external resistor or reference source, independently from load and supply voltage changes.**


## Features

- Dual channel linear LED driver with integrated and protected output stages (current sources)
- Asymmetric output stages (OUT1, OUT2) to enhance luminosity control for different functions: OUT1: 10 up to 120 mA; OUT2: 5 up to 60mA
- Independent output current's control via low power resistors and dedicated enable inputs (INSET1, INSET2, EN1, EN2)
- Output currents optimized for high current accuracy
- Integrated PWM engine supports digital dimming with very high accuracy
- Intelligent fault management
- Diagnosis enable (DEN1, DEN2) inputs integrated in enable function (EN1, EN2)
- Delay input (D) for N-1 function
- Up to 16 devices can share a common error network with only one external resistor

## Benefits

- External component need is reduced
- Direct PWM connection
- Shared ERRN network
- Shared DEN/EN network
- Shared D/DS pin capacitor
- Direct OUTSET and INSET connection
- Low active error network
- Improved and precise diagnosis

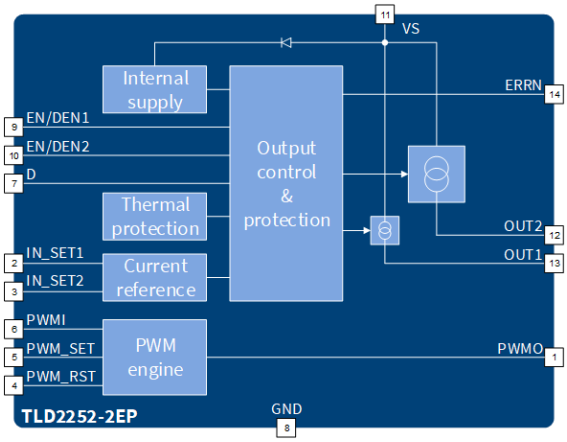
## Target applications

- Automotive LED exterior/rear lighting
- Automotive LED interior lighting
- Industrial LED lighting

## Competitive advantage

- Member of the scalable LITIX™ Basic+ family
- Improved diagnosis
- High current accuracy and broad current range
- High PWM accuracy via integrated PWM engine
- Optimized EMC performance

## Block diagram




## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| TLD22522EPXUMA1 | SP001604372 | PG-TSDSO-14 |

## Product collaterals / Online support

Product page

Application note

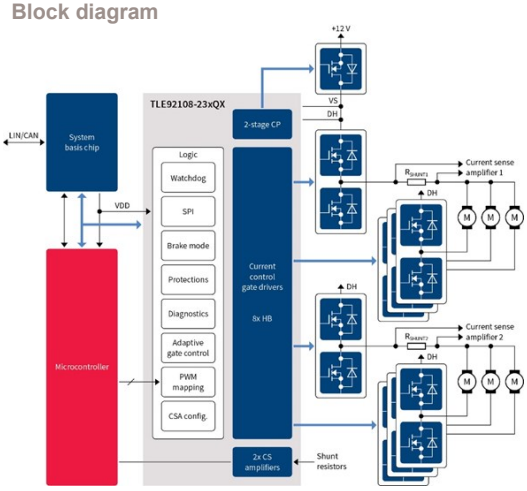
# Multi-MOSFET driver family – TLE92108
## 8x half-bridge drivers for automotive motor control applications


**The TLE92108 is a family of multi-MOSFET driver ICs, designed to control up to eight half-bridges (up to 16 n-channel MOSFETs) with one packaged device. A 24-bit Serial Parallel Interface (SPI) enables configuration of the TLE92108 and is used to control the half-bridges. The SPI offers a wide range of diagnostic features such as the monitoring of the supply voltage, the charge pump voltage, temperature warning and over-temperature shut-down. Further, each gate driver monitors its external MOSFET drain-source voltage for hard-short circuit conditions, while the devices can observe the current passing through the integrated current sense amplifier providing configurable soft-short circuit detection, in both cases providing active latching hardware protection independent of any software measures.**

### Features

- 8-fold halfbridge (16 n-channel) MOSFET driver outputs
- 3 PWM inputs
  - High-side and low-side PWM capable
  - Active free-wheeling
  - Up to 25 kHz PWM frequency
- Adaptive multi-stage MOSFET gate control
- Integrated dual stage charge pump supporting an external n-FET for reverse battery protection
- 24-bit Serial Peripheral Interface
- 2 x flexible current sense amplifiers (for HS, LS and in phase)
- Detailed off-state diagnostic as open load, short circuit to battery or to ground)
- Drain-source monitoring for hard short circuit detection
  - Current sense monitoring for soft short circuit detection
  - Overtemperature warning and shutdown
  - Timeout watchdog
- Configurable motor brake mode also in sleep mode
- Low current consumption in sleep mode (3 µA)

### Block diagram




### Benefits

- Enable cost and board space improvements
- Adaptive driver allows balancing of power dissipation vs. EMC performance, adjusts for MOSFET type and lot-to-lot variations
- High configurability

### Target applications

- Seat module and extended functions (steering column adjustment, gas pedal adjustment)
- Closure systems (e.g. trunk opener, sliding door, sun-roof)
- Central door lock
- Body control module (cargo cover, washer pump, window lift, wiper)

### Competitive advantage

- Patented gate driver concept with multi stage self-adaption
- Integrated current sense amplifier for HS, LS and in phase,
- Highest number of gate drivers integrated in one small device in the market
- Detailed off-state diagnostic

### Qualification

- AEC Q-100 qualified

### Product overview incl. data sheet link / Product page

| OPN | SP Number | Package |
|---|---|---|
| TLE92108231QXXUMA1 | SP001635674 | PG-VQFN-48 |
| TLE92108232QXXUMA1 | SP001635676 | PG-VQFN-48 |
| TLE9210823QXAPPKITTOBO1 | SP004830802 | Board |

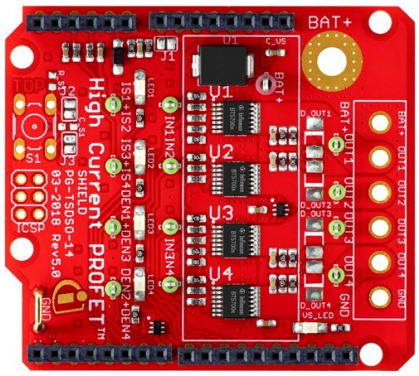
### Product collaterals / Online support

Product Family page

Product Brief

Application note

# PROFET™+2 12 V Shields for Arduino for Heating and Power distribution




**The PROFET™+2 12 V shield for heating and power distribution applications is equipped with 4 BTS700*-1EPP high-side switches and compatible with Arduino. For demonstrating relay and fuse replacement, the shield can be used to control and protect outputs of a 12 V supply, turn ON/OFF loads, measure the load current and detect no-load condition. Infineon offers four different shields for Arduino: BTS7002-1EPP/ BTS7004-1EPP/ BTS7006-1EPP / BTS7008-1EPP.**

## Features

- Lowest $R_{DS(ON)}$ on small footprint 2mΩ – 8mΩ in TSDSO-14
- Protection concept with current trip and intelligent latch
- Diagnosis with high current sense accuracy up to current trip level
- 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
- Current sense accuracy (kILIS) ≤ 5% @ nominal load current
- Benchmark cranking voltage capability able to work down to 3.1 V
- Very low output leakage current (≤ 0.5 µA up to 85°C)

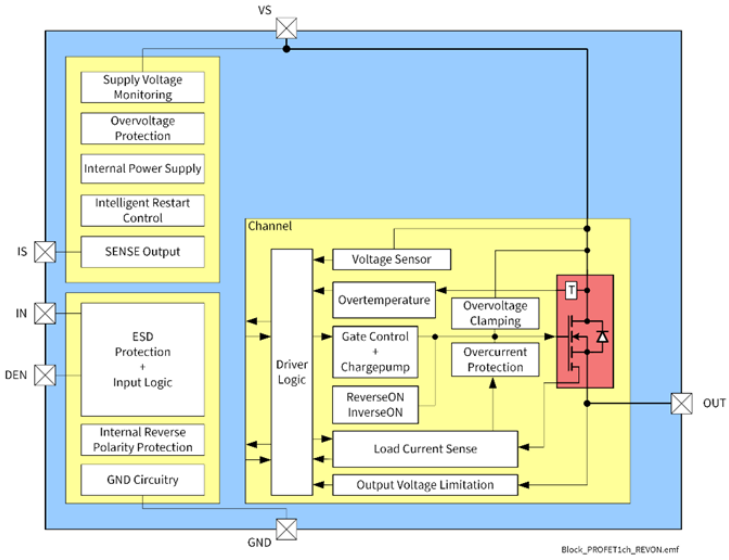
## Target applications

- Suitable for driving up to 20 A resistive, inductive, capacitive loads
- Replaces electromechanical relays, fuses and discrete circuits
- Suitable for driving heating loads and general power distribution

## Competitive advantage

- Energy efficiency and miniaturization

## Block diagram




## Product overview incl. data sheet link / Product page

| OPN | SP Number | Package |
|---|---|---|
| SHIELDBTS70021EPPTOBO1 | SP005122308 | PG TSDSO-14 |
| SHIELDBTS70041EPPTOBO1 | SP005122316 | PG TSDSO-14 |
| SHIELDBTS70061EPPTOBO1 | SP005122324 | PG TSDSO-14 |
| SHIELDBTS70081EPPTOBO1 | SP005122328 | PG TSDSO-14 |

## Product collaterals / Online support

Product page

Product Brief

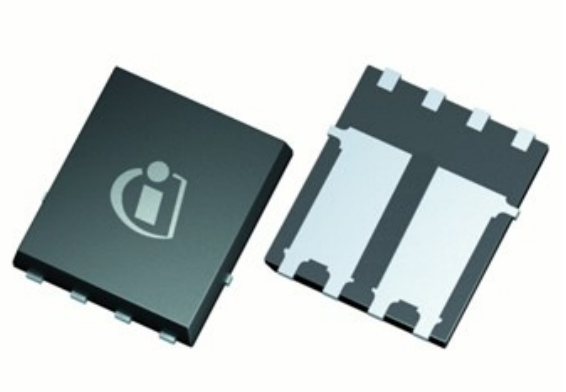
Application Brochure

Application note

# 40 V StrongIRFET™ in symmetrical, dual SuperSO8

**The IRF40H233 (40 V, 6.2 mΩ, dual N-channel, SuperSO8) is a new addition to the StrongIRFET™ power MOSFET family. By integrating two MOSFETs into a single package, the system power density is nearly double that of two single MOSFETs.**

**The IRF40H233 is designed for motor control applications such as brushed, BLDC, stepper, and servo motors.**



## Features

- Symmetrical Dual MOSFET
- Industry-standard footprint
- Product qualification according to JEDEC standard
- Optimized for broadest availability from distribution partners

## Benefits

- Cost- and space-saving solution compared to using a single power MOSFET with similar specifications and package
- Increased robustness
- Easy drop-in replacement
- Industry standard qualification level
- Multi-vendor compatibility

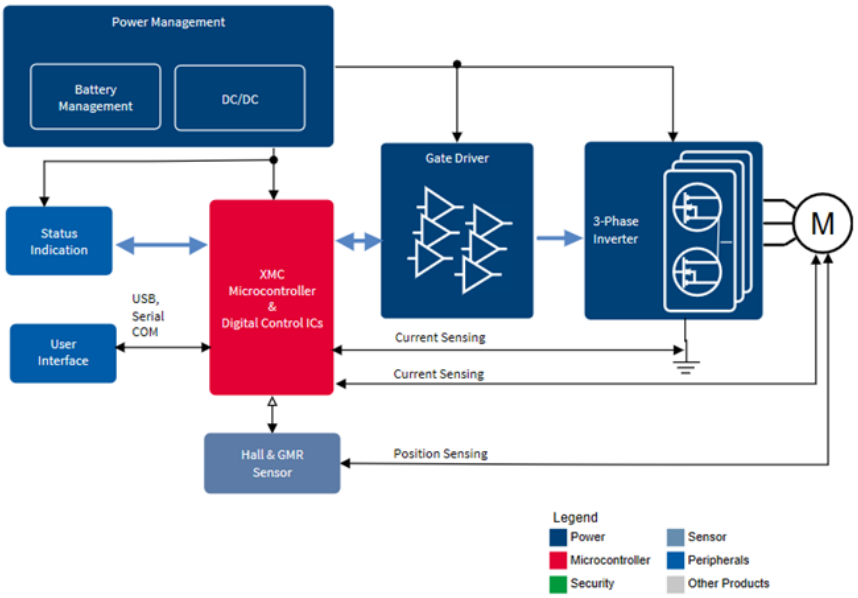
## Target applications

- Brushed motor
- Brushless DC motor
- Stepper motor
- Servo motor

## Competitive advantage

- The IRF40H233 dual MOSFET incorporates two symmetrical MOSFETs in a single package resulting in reduced system costs

## Block diagram




## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| IRF40H233XTMA1 | SP001683272 | DUAL PQFN 5X6 8L |

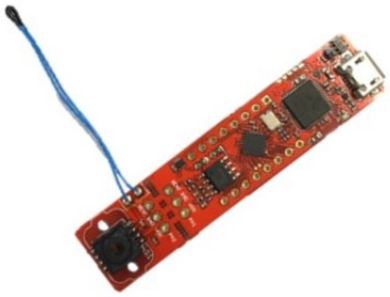
## Product collaterals / Online support

Product page

Product brief

# XENSIV™ - New(!) Pressure 2GO kits

**Infineon's famous portfolio of XENSIV™ Sensor 2GO kits gets expanded with new sensors. Just for you to recap: Infineon´s 2GO kit family is a budget-priced evaluation board equipped with a sensor combined with an ARM® Cortex™-M0 CPU. The sensor 2GO kit has a complete set of on-board devices, including an on-board debugger. In addition a dedicated GUI supports a fast evaluation of the device. So far the family of 2GO kits is available for magnetic angle, 3D Hall as well magnetic current and speed sensors. We now enlarged and expanded the portfolio by our automotive BAP (barometric pressure) and MAP (manifold pressure) sensors which are comprised under our new XENSIV™ Pressure Sensor 2GO kits. The new Pressure 2GO kits are available as analog and digital BAP as well as analog and digital BAP sensors.**



### Features

- MAP and BAP sensors available in 2GO kit setup
- Sensor and ARM® Cortex™-M0 CPU on one board
- Comprises pressure couple (with sealing) and pneumatic connector (4mm/6mm tube)
- Fast evaluation
- Ready-to-use GUI for 2GO kits
- External NTC included for KPKP275-PS2GO-KIT

### Benefits

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

### Target applications

- MAP and BAP for automotive and industry
- Automotive applications
- Industrial control
- Consumer applications
- Medical applications
- Weather stations
- Altimeters

### Competitive advantage

- Ready-to-use kit including sensor and ARM® Cortex™-M0 CPU
- Dedicated GUI enabling fast orientation and evaluation
- Fast start up via pressure couple (with sealing) and pneumatic connector (4mm/6mm tube)

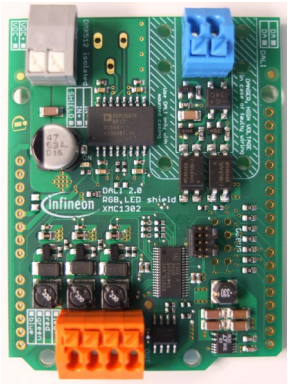
### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| KP275PS2GOKITTOBO1 | SP002676648 | Board |
| KP215F1701PS2GOKITTOBO1 | SP002676652 | Board |
| KP229E3518PS2GOKITTOBO1 | SP002676656 | Board |
| KP254PS2GOKITTOBO1 | SP002676660 | Board |
| KP236PS2GOKITTOBO1 | SP002676664 | Board |

### Product collaterals / Online support

BAP & MAP 2GO kits overview
MAP Pressure Sensor 2GO kit – KP215F1701
MAP Pressure Sensor 2GO kit - KP229E3518
XENSIV™ – Sensor 2GO kits and Shield2Go
Infineon for Makers – Shield2Go Overview
Product brochure-Shield2Go
Whitepaper for Shield2Go boards and My IoT adapter
XENSIV™ Automotive BAP and MAP sensors

# Infineon XMC 3-Channels RGB LED Lighting Shield w/ XMC1302



**The XMC 3 channels RGB LED Lighting Shield from Infineon technologies is one of the first intelligent evaluation boards compatible with Arduino as well as Infineon's XMC1100 BOOT KIT. It is designed to be easily configurable and combinable for different LED light engines and lamps, for fast prototyping and in-expensive evaluation of LED lighting applications. The RGB LED Lighting Shield with XMC1302 uses a DC/DC buck topology and is able to drive up to 3 LED channels with constant current. The shield itself is powered by a programmable XMC 32-bit ARM® MCU with embedded Brightness Color Control Unit (BCCU, XMC1300 MCU series), for flicker-free LED dimming and color control. The BCCU enables extreme low-cost but high quality LED lighting solutions, with minimal user code. The RGB LED lighting shield has also been designed to provide options for the evaluation of smooth, eye-friendly dimming, color mixing for different topologies, and it can be extended with for example DALI/DMX or radar.**

### Features

- Compatible with Arduino Uno R3 and XMC1100 Boot Kit from Infineon
- Easy configurable for various light engines and any input voltage (within operating conditions)
- Wide DC input voltage range
- Simple I²C interface
- DALI and DMX interface
- Small size thanks to high-frequency current control (high power density)
- Fast prototyping of 3 channels RGB LED lighting
- Flicker-free light thanks to high-speed pulse density modulation
- Easy-to-use dynamic dimming and color control

### Benefits

- Fast prototyping of 3 channels RGB LED lighting
- Flicker-free light thanks to high-speed pulse density modulation
- Easy-to-use dynamic dimming and color control
- Small size thanks to high-frequency current control (high power density)
- Backdoor access to on-board-microcontroller for advanced users and parameterization (external debugger KIT_XMC_LINK_SEGGER_V1 needed)

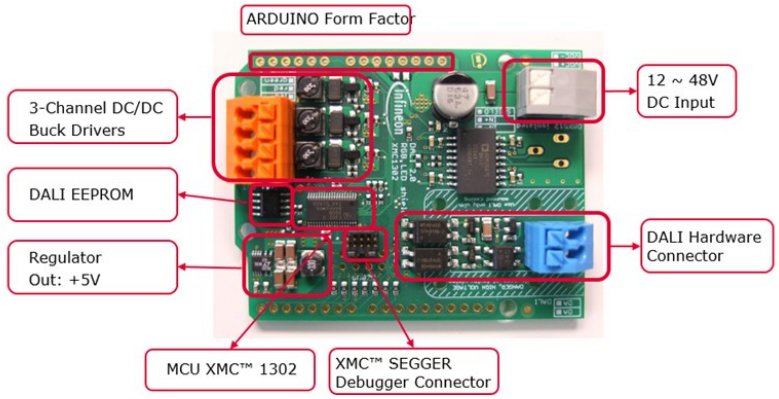
### Competitive advantage

- Flicker-free light thanks to high-speed pulse density modulation (specific peripheral from XMC devices BCCU)
- Small size thanks to high-frequency current control (high power density)

### Target applications

- Cloud connected IoT devices
- Building & industrial automation
- EtherCAT slave controllers
- LED lighting
- Home appliances
- Horticultural and indoor gardening

### Block diagram




### Product overview incl. product page link

| OPN | SP Number | Package |
|---|---|---|
| KITXMCLEDDALI20RGBTOBO1 | SP005324196 | Board |

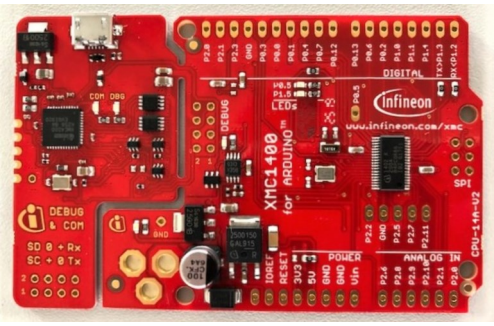
### Product collaterals / Online support

Quick start guide

# Infineon XMC1400 ARDUINO kit

**Explore the most of our XMC1400 Microcontroller with the XMC1400 ARDUINO kit. This kit utilizes Infineon's industry leading ARM® Cortex®-M0 microcontroller in combination with ARDUINO form factor.**

**Focused on evaluate the capabilities of the XMC1400 Microcontroller multiple applications solutions, it can be used with a wide range of development tools including Infineon's free of charge Eclipse based IDE, DAVE™ and much more.**




### Features

- Compatible with Arduino™ Uno R3
- XMC1400 Cortex M0 microcontroller at 48MHz
- Multiple applications configurations for lighting, motor control, power conversion and automation

### Benefits

- Powerful microcontroller XMC1400
- ARDUINO™ UNO compatibility
- Flexibility
- CAN connectivity
- Debugger included

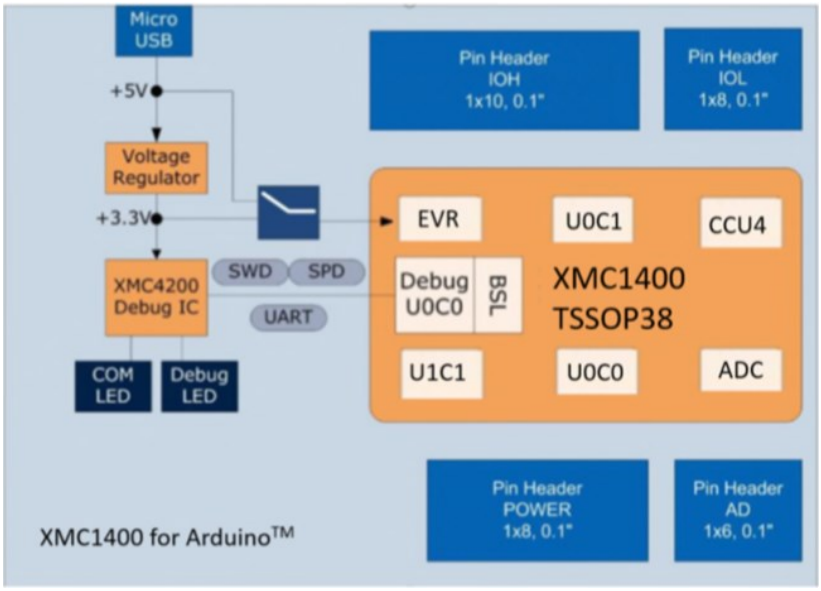
### Target applications

- Makers
- Cloud connected IoT devices
- Building & industrial automation
- LED lighting
- Home appliances

### Competitive advantage

- Powerful Microcontroller XMC1400
- ARDUINO UNO compatibility
- Flexibility
- CAN connectivity
- Optimized for motor control and Lighting

### Block diagram




### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| KITXMC1400ARDUINOTOBO1 | SP005346544 | Board |

### Product collaterals / Online support

Product page

User manual

XMC™ software for Arduino IDE

# 650 V high and low current half-bridge SOI gate driver family

**Infineon broadens its EiceDRIVER™ portfolio with the new 2ED218x - high current 650 V, 2.5 A, half-bridge SOI gate driver family and new 2ED210x - low current 650 V, 0.7 A, half-bridge SOI gate driver family. Both product families include two package options of DSO-8 and DSO-14.The products come with integrated ultra-fast bootstrap diode, excellent negative VS transient immunity and independent under voltage lockout for high and low side output channels, suitable for MOSFETs and IGBTs.**


## Features

- Operating voltages (VS node) up to + 650 V
- Negative VS transient immunity of 100 V
- Integrated ultra-fast, low resistance bootstrap diode, lowers the BOM cost
- Shutdown input turns off both channels (selective parts)
- 200 ns propagation delay
- Separate logic and power ground, shorten the gate loop (DSO-14 package)
- Independent under voltage lockout (UVLO) for both channels
- Maximum supply voltage of 25 V

## Benefits

- Integrated bootstrap diode (BSD)- Space saving, reduced BOM cost, smaller PCB at lower cost with simpler design
- 50% lower level-shift losses with Infineon SOI technology for higher switching frequencies for SMPS and UPS applications
- Excellent ruggedness and noise immunity against negative transient voltages (-100 V) on VS pin
- No parasitic device structures present in the device, hence no parasitic latch up at all temperature and voltage conditions
- High current family - suitable for high current power device, and high frequency application

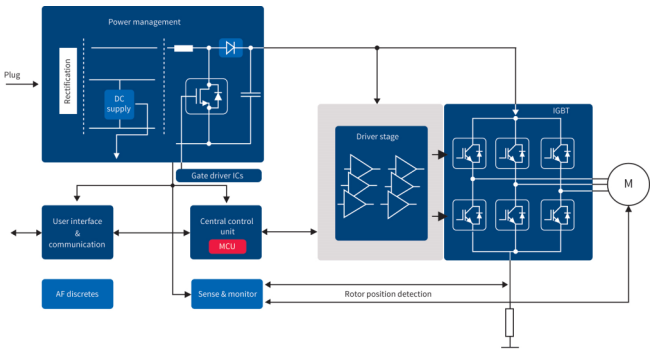
## Target applications

- MHA
- Industrial drives
- Motor control and drives
- Switched mode power supply (SMPS)
- Uninterruptible power supply (UPS)

## Competitive advantage

- Based on Infineon’s SOI-technology, having excellent ruggedness and noise immunity against negative transient voltages on VS pin.

## Block diagram




## Product overview incl. data sheet link

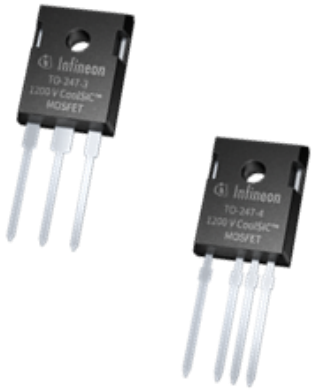
| OPN | SP Number | Package |
|---|---|---|
| 2ED21064S06JXUMA1 | SP001710052 | PG-DSO-14 |
| 2ED2106S06FXUMA1 | SP001710050 | PG-DSO-8 |
| 2ED21084S06JXUMA1 | SP003349844 | PG-DSO-14 |
| 2ED2108S06FXUMA1 | SP001710054 | PG-DSO-8 |
| 2ED21091S06FXUMA1 | SP001710060 | PG-DSO-8 |
| 2ED21094S06JXUMA1 | SP003348332 | PG-DSO-14 |
| 2ED2109S06FXUMA1 | SP001710062 | PG-DSO-8 |
| 2ED21814S06JXUMA1 | SP003353682 | PG-DSO-14 |
| 2ED2181S06FXUMA1 | SP001710038 | PG-DSO-8 |
| 2ED21824S06JXUMA1 | SP003244528 | PG-DSO-14 |
| 2ED2182S06FXUMA1 | SP003244532 | PG-DSO-8 |
| 2ED21834S06JXUMA1 | SP003357056 | PG-DSO-14 |
| 2ED2183S06FXUMA1 | SP001710042 | PG-DSO-8 |
| 2ED21844S06JXUMA1 | SP001710048 | PG-DSO-14 |
| 2ED2184S06FXUMA1 | SP001710046 | PG-DSO-8 |

## Product collaterals / Online support

Product family page

Gate driver application matrix

# 1200 V CoolSiC™ discrete MOSFETs M1H portfolio extension in TO247-3 and in TO247-4 packages



**Infineon is now starting the market introduction for 12 new products CoolSiC™ 1200 V discrete MOSFETs portfolio in TO247 three-pin and four-pin packages. With these products Infineon addresses the fast-growing demand for energy-efficient SiC solutions in power conversion schemes such as battery charging infrastructure, energy storage solutions, photovoltaic inverters, uninterruptable power supplies (UPS), motor drives and industrial powers supplies. The new discrete portfolio is rated from 30 mΩ up to 350 mΩ and fits for 3-phase power systems ranging from about 1 kW to 80 kW.**

## Features

- Ultra-low switching losses
- Threshold-free on state characteristic
- Wide gate-source voltage range
- Benchmark gate threshold voltage, $V_{gs(th)}$ = 4.5 V
- 0 V turn-off gate voltage for easy and simple gate drive
- Fully controllable dV/dt
- Robust body diode for hard commutation
- Temperature independent turn-off switching losses
- additionally for TO247-4 package device
- Sense pin for optimized switching performance

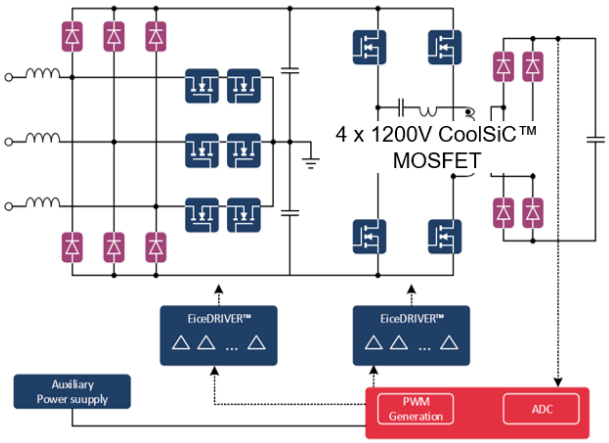
## Benefits

- Efficiency improvement
- Enabling higher frequency
- Increased power density
- Cooling effort reduction
- Reduction of system complexity and cost

## Target applications

- EV charging
- Energy storage
- Power supplies
- Motor control and drives

## Application diagram




## Competitive advantage

- High gate threshold voltage, $V_{GS(th)}$ = 4.5 V
- 0 V turn-off gate voltage for easy and simple gate drive
- Short circuit capability of 3 µs at gate voltage 15 V.

## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| IMW120R030M1HXKSA1 | SP001727390 | TO-247-3 |
| IMW120R060M1HXKSA1 | SP001808368 | TO-247-3 |
| IMW120R090M1HXKSA1 | SP001946164 | TO-247-3 |
| IMW120R140M1HXKSA1 | SP001946184 | TO-247-3 |
| IMW120R220M1HXKSA1 | SP001946188 | TO-247-3 |
| IMW120R350M1HXKSA1 | SP001808376 | TO-247-3 |
| IMZ120R030M1HXKSA1 | SP001727394 | TO-247-4 |
| IMZ120R060M1HXKSA1 | SP001808370 | TO-247-4 |
| IMZ120R090M1HXKSA1 | SP001946182 | TO-247-4 |
| IMZ120R140M1HXKSA1 | SP001946186 | TO-247-4 |
| IMZ120R220M1HXKSA1 | SP001946190 | TO-247-4 |
| IMZ120R350M1HXKSA1 | SP001808378 | TO-247-4 |

## Product collaterals / Online support

Product family page

Application note

Application brochure

# Integrated two-stage PFC + LLC/LCC resonant half-bridge controller for LED drivers in DSO-19 package

**ICL5102HV control IC for LED drivers offers a unique one-package solution for lighting applications up to 350 W, supporting LLC/LCC topology. It is particularly designed to deliver best performance of total harmonic distortions (THD) and power factor (PF).**

**Compared to level-shifter technology, the integrated coreless transformer not only further reduces the loss at high operation frequency, but also enhances the capability of handling huge negative voltage (-600 V on HSGND). Reduce the number of external components to optimize form factor and reduce bill of material (BOM) with the integrated two-stage combination controller (PFC + LLC/LCC) for lighting applications. Simplify your design and scale down time-to-market.**


## Features

- Coreless transformer HS drive
- 480 $V_{AC}$ capable
- Resonant half-bridge (HB) controller with fixed or variable switching frequency control
- Maximum 500 kHz HB switching frequency and soft-start frequency up to 1.3 MHz
- Resonant HB burst mode (BM) ensures power limitation and low standby power <300 mW
- Excellent system efficiency up to 94%
- High-side MOSFET driver with coreless transformer
- Various safety features (protection for input brown-out, PFC bus overvoltage and PFC overcurrent, output overvoltage, output overcurrent/short circuit, output overpower/overload, capacitive mode protection and external over- temperature protection)

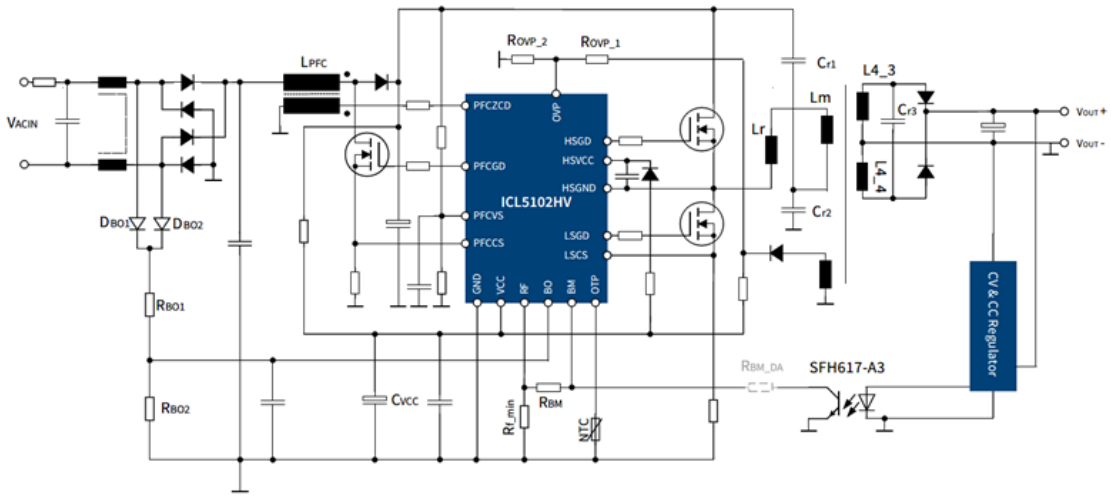
## Benefits

- Best THD and PF enable system level optimization
- Combo IC of PFC + LLC/LCC shortens design to market
- One IC for global design, reduced variants of products, meaning scale of economy and simplified inventory management

## Target applications

- LED lighting
- Outdoor lighting
- Horticulture lighting
- ACDC applications up to 350 W

## Block diagram




## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| ICL5102HVXUMA1 | SP003111046 | PG-DSO-19 |

## Product collaterals / Online support

Product page

Product brief

Application note

# CoolSiC™ MOSFET evaluation board for 7.5 kW motor drive applications

**The EVAL-M5-E1B1245N-SiC is a complete evaluation board including a 3-phase CoolSiC™ MOSFET power module for motor drive applications. In combination with one of the available MADK control board options with the M5 32-pin connector, it demonstrates Infineon's silicon carbide power module technology.**

**It features the EasyPACK™ 1B 1200 V CoolSiC™ MOSFET power module FS45MR12W1M1_B11 in sixpack configuration which is optimized for motor drive applications with very high frequency switching operation such as General Purpose Drives and the fast growing servo drive and robotics market.**

**It is equipped with all assembly groups for sensorless field oriented control (FOC), over-temperature and over-current protection as well as short circuit protection.**

**The evaluation board was developed to support customers during their first steps designing motor drive applications with FS45MR12W1M1_B11.**

## Features

- EasyPACK™ 1B 1200 V CoolSiC™ MOSFET power module FS45MR12W1M1_B11 in sixpack configuration
- Low inductive design
- PCB size is 259 mm x 204 mm
- Input voltage 340 – 480 $V_{AC}$
- Overload and short-circuit hardware protection
- Maximum 7.5 kW motor power output
- Auxiliary power supply with 5 V

## Benefits

- Support customers during their first steps designing application with the sixpack power module FS45MR12W1M1_B11
- Optimized for motor drive applications with very high frequency switching operation

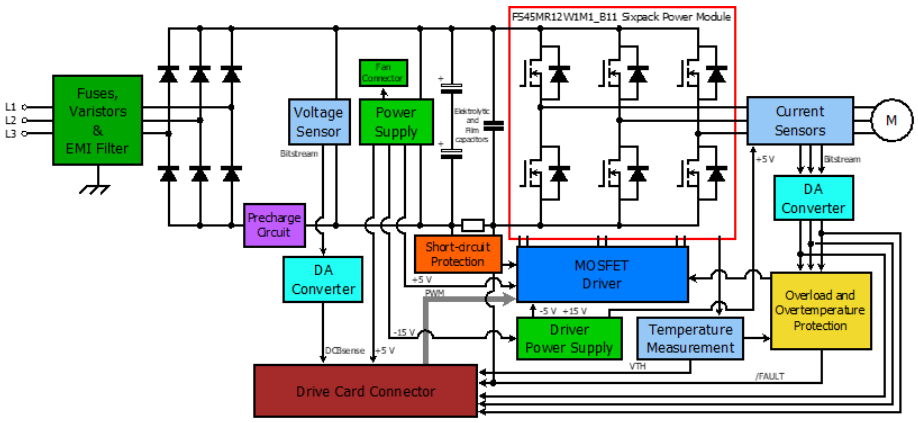
## Target applications

- Motor control and drives

## Competitive advantage

EVAL-M5-E1B1245N-SiC is an evaluation board for motor drive applications comprising the silicon carbide sixpack power module FS45MR12W1M1_B11. Combined in a kit with one of the available MADK control board options, it demonstrates Infineon's silicon carbide power-module technology

## Application diagram




## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| EVALM5E1B1245NSICTOBO1 | SP005348966 | Board |

## Product collaterals / Online support

Product page

Product Brief

Product Brochure

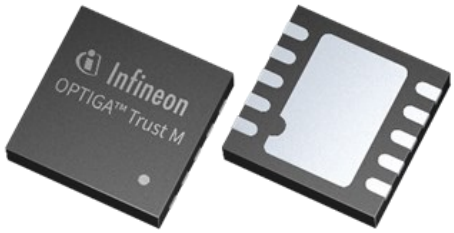
Application Note

# OPTIGA™ TRUST M SLS32AIA

**The OPTIGA™ Trust M is a high-end security solution that provides an anchor of trust for connecting IoT devices to the cloud, giving every IoT device its own unique identity. This pre-personalized turnkey solution offers secured, zero-touch onboarding and the high performance needed for quick cloud access.**

**OPTIGA™ Trust M offers a wide range of security features, making it ideal for industrial and building automation applications, smart homes and connected consumer devices.**

**The turnkey set-up with full system integration minimizes design, integration and deployment effort.**




### Features

- High-end security controller with CC EAL6+ (high) certification
- Turnkey solution: ECC NIST P256/P384, SHA-256, TRNG, DRNG, RSA® 1024/2048
- Cryptographic toolbox
- I2C interface with shielded connection
- Hibernate mode for zero power consumption
- Up to 10 kB user memory
- USON-10-2 package (3 x 3 mm)
- Temperature range up to -40°C to +105°C
- Software framework on GitHub
- Device security monitor
- Lifetime of up to 20 years for industrial and infrastructure applications

### Target applications

- Industrial and building automation
- Smart home
- Consumer devices
- Drones

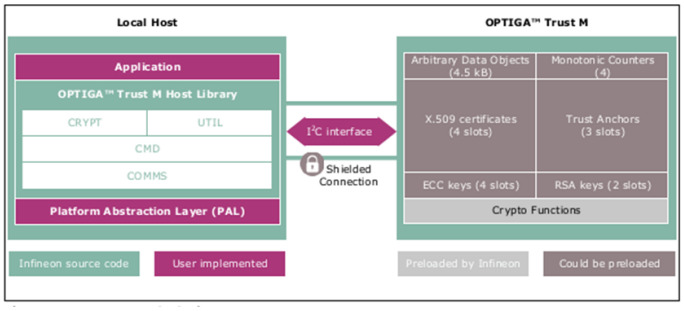
### Benefits

- Up to 10 times faster cloud connection
- No secure production environment need at customer premises
- No PKI handling required at customer premises
- Secure storage of credentials
- Easy and cost effective security solution for connected devices.
- High security with product based on CC certified security controller, and CC certified production site for preprogramming of keys and certificates.

### Competitive advantage

- Open source host code on github
- Turnkey solution for fast and easy system integration
- Zero-touch provisioning – unique credentials preprogrammed per chip
- Advanced asymmetric cryptography (ECC & RSA) in a single-chip solution
- AES128-CCM encrypted communication between the host and the security controller
- Fast and easy access to any cloud provider thanks to pre-personalized certificates

### Block diagram




### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| SLS32AIA010MHUSON10XTMA2 | SP005348666 | PG-USON-10 |
| SLS32AIA010MSUSON10XTMA2 | SP005348664 | PG-USON-10 |

### Product collaterals / Online support

Product page

Product Brief

Host code and documentation

# OPTIREG™ - TLS850F2TA V50

**The OPTIREG™ linear high performance voltage regulator TLS850F2TA V50 has a TO263 package which guarantees one of the best thermal performances. In addition the complete feature set with Enable, Reset and Watchdog enable this LDO to become an all purpose voltage supply for rough automotive environments up to 500 mA.**


### Features

> Wide input voltage range from 3.0 V to 40 V
> Fixed output voltage 5 V
> Output voltage precision ≤ ±2 %
> Output current capability up to 500 mA
> Ultra low current consumption typ. 40 µA
> Very low dropout voltage typ. 70 mV@100 mA
> Stable with ceramic output capacitor of 1 µF
> Delayed reset at power-on: 16.5 ms
> Adjustable reset threshold down to 2.50 V
> Watchdog with fixed timing: 96 m

### Competitive advantage

> Very robust, fast load response, best in class Vdrop, high accuracy, digital watchdog and reset timing

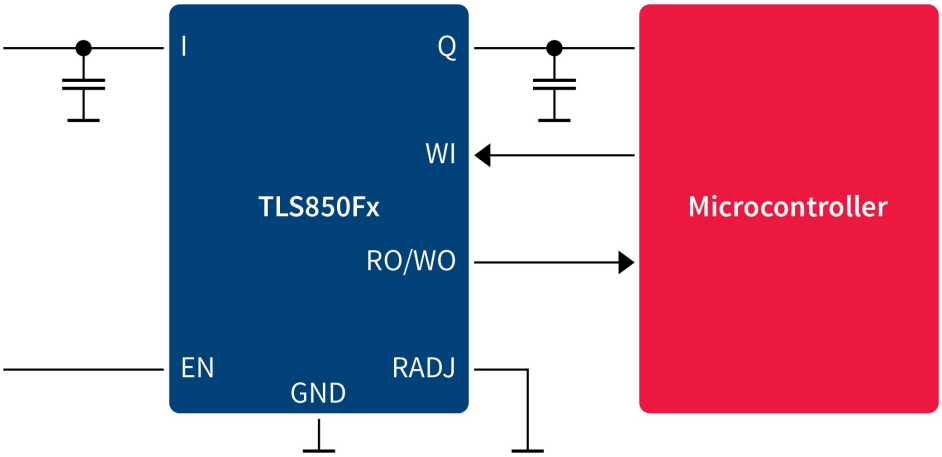
### Benefits

> Multi purpose product helps customer to minimize vendor product portfolio
> Functional safety support –ASIL B
> Fully applicable for harsh automotive environment
> Excellent cranking support
> Less/ smaller external components as required by similar LDO solutions
> Faster loadstep response, less noise and less external components than switch mode regulators

### Target applications

> Automotive general ECUs
> Dahsboard and cluster supplies
> Powertrain and EPS applications
> Microcontroller supply for safety applications

### Application diagram



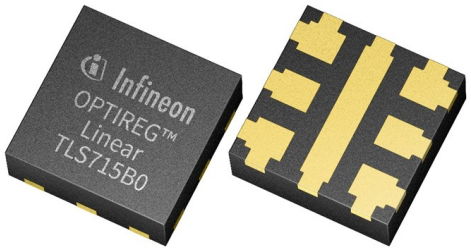

### Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| TLS850F2TAV50ATMA1 | SP002059374 | PG-TO263-7 |

### Product collaterals / Online support

Product page
Product brief
Trainings

# OPTIREG™- TLS715B0NA V50




**OPTIREG™ linear TLS715B0NAV50 has the highest automotive package power density available today: up to 1W on a 2x2mm² footprint**

**TLS715B0NA V50 - OPTIREG™ Linear Voltage Regulator is a low dropout linear voltage regulator for load current up to 150 mA. An input voltage of up to 40 V is regulated to VQ,nom = 5 V with ±2 % precision. The TLS715B0, with a typical quiescent current of 36 µA, is the ideal solution for systems requiring very low operating current, such as those permanently connected to the battery.**

## Features

> Wide input voltage range from 4.0 V to 40 V

> Output voltage 5 V ±2%

> Output current up to 150 mA

> Low current consumption of 36µA

> Low dropout voltage of 180 mV@100 mA

> Table with small output capacitor of 1µF

> PSSR typ 60dB (100Hz)

> Enable

## Benefits

> Tiny food print

> High power density package,

> Automotive qualified (AECQ100 grade 1)

> Leadless

> Suitable for automated optical inspection

## Target applications

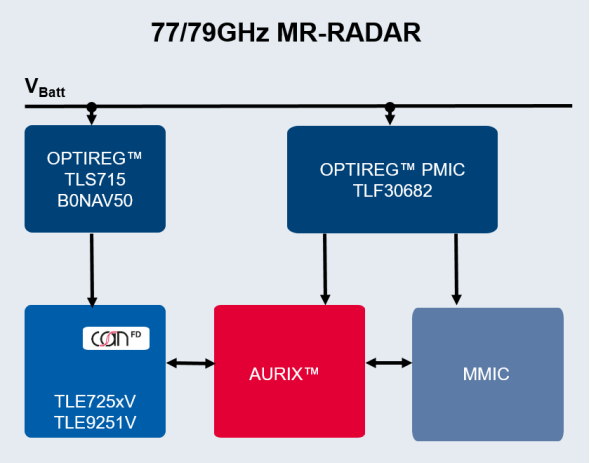
> CAN supply

> Microcontroller supply, other automotive applications

## Competitive advantage

> Tiny food print with excellent thermal performance package

## Application diagram




## Product overview incl. data sheet link

| OPN | SP Number | Package |
|---|---|---|
| TLS715B0NAV50XTSA1 | SP001637366 | PG-TSNP-7 |
| TLS715B0TSNPBOARDTOBO1 | SP001777306 | Board |

## Product collaterals / Online support

Product page

Product brief

Training