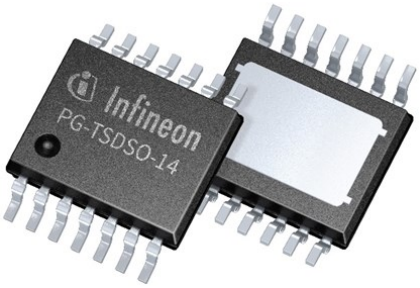
New Product Introduction

May 2020

PROFET™+2 12V Grade0 - High-Side switch portfolio with extended junction temperature range up to 175°C

PROFET™+2 12 VGrade0 portfolio consists of six different high-side switches (from 4mOhm to 80mOhm) and offers an extended junction temperature range up to 175°C. State-of-the-art protection and diagnosis features, as well as the PG-TSDSO-14 exposed pad package are the same for PROFET™+2 12V Grade0 and Grade1 devices.



Features

High-Side switch with Diagnosis and Protection

- Part of PROFET™+2 12V Family
- ReverseON for low power dissipation in reverse polarity
- Switch ON capability while inverse current condition (Inverse ON)
- Green Product (RoHS compliant)
- Qualified in accordance with AEC-Q100 Grade0

Benefits

- Extended thermal budget enables partitioning of higher ohmic parts at higher PCB temperature
- Additional qualification offers extended lifetime of PROFET™+2 12V Grade0 at elevated temperature and can fulfill the requirements of extended mission profiles
- Diagnosis concept is tailored to address power distribution applications thanks to the high current sense accuracy (k_{ILIS})
- Family approach within PROFET™+2 12V Grade1 and Grade0 enables high design flexibility on the reduced PCB area with low power losses and high accuracy

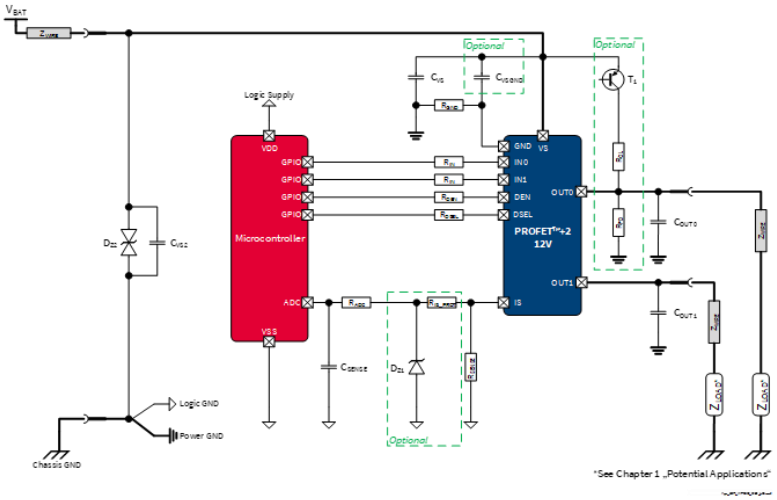
Target applications

- Transmission
- Powertrain
- Under the hood applications

Competitive advantage

First automotive qualified Grade0 high-side switch in the market

Application diagram



Product collaterals / Online support

Product Family Page

Product Brief

Product overview incl. data sheet link

OPN	SP Number	Package
BTS70041EPZXUMA1	SP003986220	PG-TSDSO-14
BTS70061EPZXUMA1	SP003986224	PG-TSDSO-14
BTS70081EPZXUMA1	SP002746778	PG-TSDSO-14
BTS70082EPZXUMA1	SP003094802	PG-TSDSO-14
BTS70401EPZXUMA1	SP002746780	PG-TSDSO-14
BTS70802EPZXUMA1	SP002746782	PG-TSDSO-14
SHIELDBTS70041EPZTOBO1	SP005344711	board
SHIELDBTS70802EPZTOBO1	SP005344722	board

StrongIRFET™ 40 V / 60 V power MOSFET D2PAK 7pin+

Infineon's latest StrongIRFET™ 40 V / 60 V MOSFET devices are optimized for both high current and low $R_{DS(on)}$ making them the ideal solution for high current battery power applications. The flagship IRL40SC228 offers a 50 percent increase in current carrying capability and 13 percent lower $R_{DS(on)}$ when compared to previous generation devices leading to increased power density and reduction in I^2R losses.

Features

- Low $R_{DS(on)}$
- High current rating
- Industry standard package
- Flexible pinout
- Logic or normal level gate drive

Benefits

- Reduction in conduction losses
- Increased current carrying capability
- Drop in replacement to existing devices
- Standard pinout allows for drop in replacement
- Customizable footprint offers design flexibility
- Gate drive flexibility

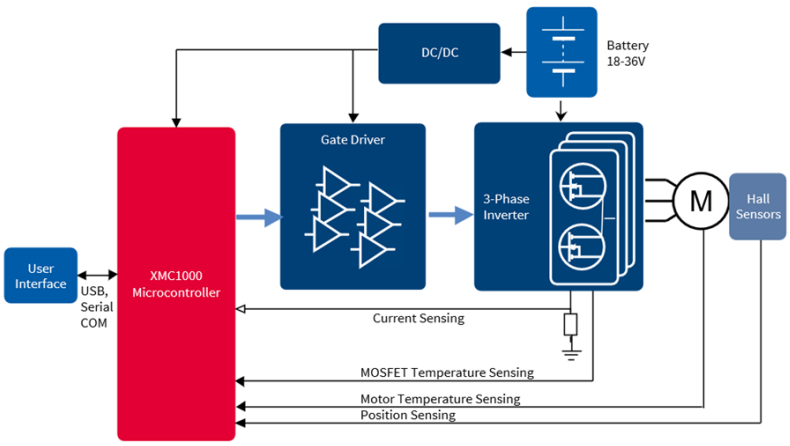
Target applications

- Battery power tools
- Battery powered applications
- Battery management
- Low voltage drives

Competitive advantage

- Infineon has the broadest portfolio of D2PAK 7pin devices, more than all the other the competitors combined!

Application diagram: Battery powered tool



Product collaterals / Online support

Product page IRL40SC209

Product page IRF60SC241ARMA1

Product page IRL60SC216ARMA1

Product Brief

Product overview incl. data sheet link

OPN	SP Number	Package
IRL40SC209	SP001568434	D2PAK7P
IRF60SC241ARMA1	SP001646066	PG-TO263-7
IRL60SC216ARMA1	SP001646070	PG-TO263-7

62mm power modules with pre-applied Thermal Interface Material (TIM)

The 62mm power module is a well-established module design with isolated baseplate and screw main terminals. The four baseplate mounting holes enable fast, cost-efficient and easy module assembly. The 62mm module housing is optimized for highest system availability, realized by high thermal cycling capability. It provides a minimum of service cost and off-time losses.Infineon extends this well-established module family by two additional products:

FF200R12KS4P featuring IGBT2 S4 “fast” which is the right module when application requires high switching frequency and low losses e.g. Uninterruptible power supply (UPS) or industrial heating and welding

FF600R12KE4P featuring TRENCHSTOP™ IGBT4 is the best-in-class module. It allows to increase the inverter power using same cabinet frame size. In Medium Voltage Drives it brings a 150 A power cell of cascaded inverter up to 250 A without major mechanical changes

Features

- Pre-applied Thermal Interface Material (TIM)
- High short-circuit capability
- High creepage and clearance distances
- Copper base plate
- Standard housing
- Package with CTI > 400

Benefits

- Flexibility
- Optimal electrical performance
- Unbeatable robustness
- Optimized performance at high frequency switching for resonant inverter
- application

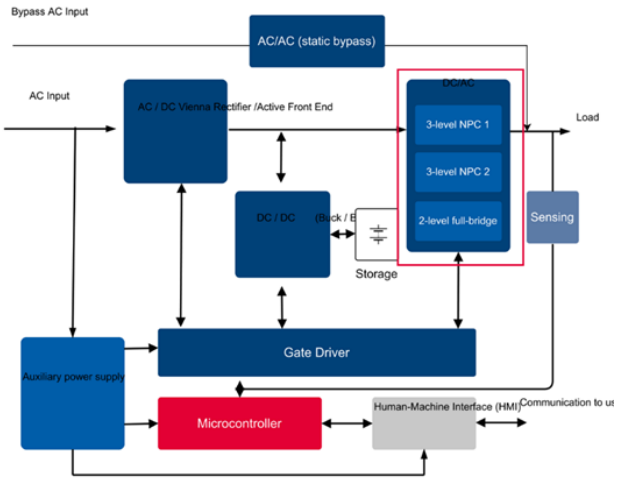
Target applications

- Motor control and drives
- Solutions for solar energy systems
- Commercial, construction and agricultural vehicles (CAV)
- Uninterruptible power supply (UPS)
- Industrial heating and welding

Competitive advantage

- Right module when application requires high switching frequency and low losses

Application diagram: Online UPS



Product collaterals / Online support

Product page FF200R12KS4P

Product page FF600R12KE4P

Online simulation

Application Note

Product overview incl. data sheet link

OPN	SP Number	Package
FF200R12KS4PHOSA1	SP001403816	AG-62MM-1
FF600R12KE4PBOSA1	SP001603612	AG-62MM-1

PrimePACK™ for switched reluctance motor

Switched reluctance motors e.g. in commercial, construction and agricultural vehicles (CAV) have less components compared to AC motors, making them simpler, more cost-effective and less error-prone.

The FR900R12IP4D was especially designed for these switched reluctance motors and features two built-in choppers. Instead of designing an inverter with PrimePACK™ 2, customers can reduce the module count by 50% with PrimePACK™ 3+.

For reliable operation in harsh environment conditions, the module is equipped with an enlarged diode for regenerative operation. In addition, customers can benefit from high vibrational resistance and high mechanical robustness thanks to the well-known PrimePACK™ 3+ package.

Features

- 900 A, 1200 V in PrimePACK™ 3+ housing
- Chopper and inverter chopper configurations in single package
- Enlarged diode for regenerative operation
- Package with CTI > 400

Benefits

- High mechanical robustness
- High vibration resistance
- Less modules required for an inverter design

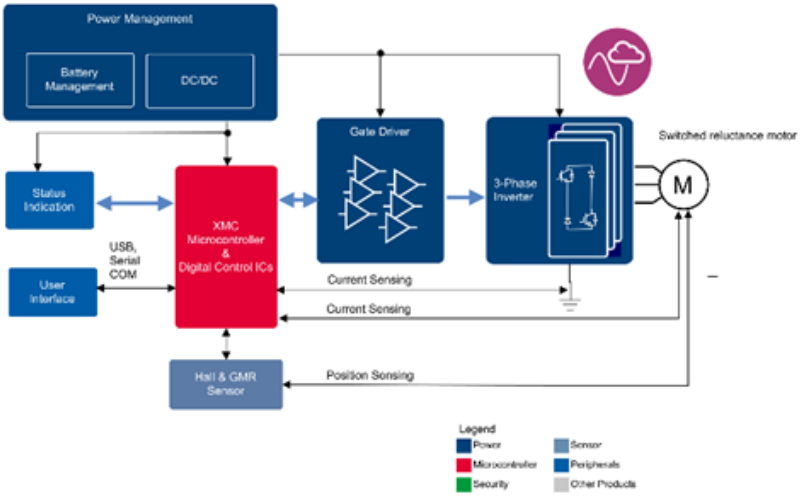
Target applications

- Motor control and drives
- Commercial, construction and agricultural vehicles (CAV)

Competitive advantage

- Cost-effective solution to drive low cost switched reluctance motors

Application diagram: Motor control for switched reluctance motors



Product collaterals / Online support

Product page

PrimePACK™ family page

Video

Application note

Product overview incl. data sheet link

OPN	SP Number	Package
FR900R12IP4DBPSA1	SP000905656	AG-PRIME3+-1

OptiMOS™ logic level 120 V MOSFETs in SuperSO8

OptiMOS™ 3 power MOSFETs in logic level are highly suitable for charging, adapter and telecom applications. The devices' low gate charge reduces switching losses without compromising conduction losses. Logic level MOSFETs allow operations at high switching frequencies and due to a low gate threshold voltage can be driven directly from microcontrollers.

Features

- Low $R_{DS(on)}$ in a small package
- Low gate, output and reverse recovery charge
- Logic level gate drive
- Small standard package

Benefits

- Increased power density
- Reduced switching losses
- Parts can be driven from 5 V or directly from microcontrollers
- Reduced form factor

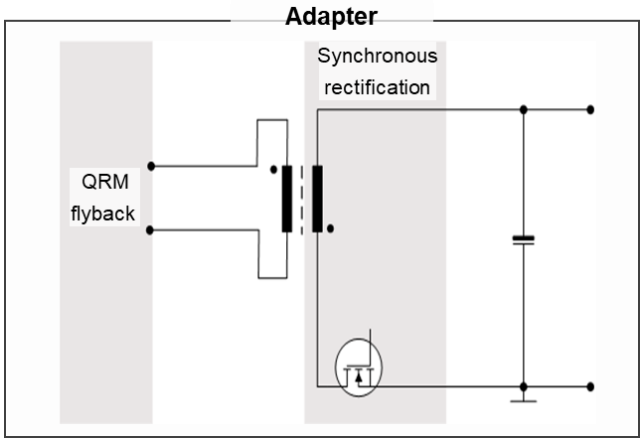
Target applications

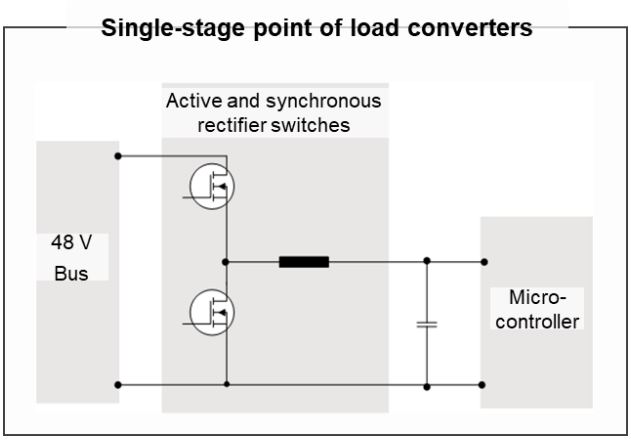
- Charger
- Adapter
- Telecom

Competitive advantage

- Capable of being driven directly from microcontrollers (slow switching)
- Reduced system BOM compared with a normal level MOSFET

Application examples





Product collaterals / Online support

Product Family Page

Product page BSC080N12LS G

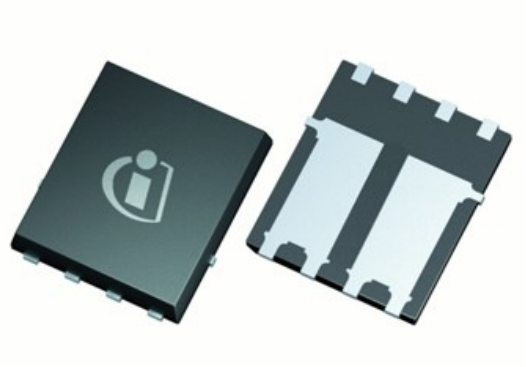
Product page BSC120N12LS G

Product overview incl. data sheet link

OPN	SP Number	Package
BSC080N12LSGATMA1	SP002256844	PG-TDSON-8
BSC120N12LSGATMA1	SP004486460	PG-TDSON-8

OptiMOS™ 40 V / 60 V dual power MOSFETs in SuperSO8

Infineon's latest OptiMOS™ 40 V / 60 V dual N-channel power MOSFETs (non-logic level/logic level) are designed for applications such as SMPS, wireless charging, load switches, battery powered applications and LV drives.



Features

- Dual MOSFET
- Fast switching performance
- Industry-standard footprint
- Low thermal resistance
- High operating temperature (up to 175°C)

Benefits

- Cost- and space-saving solution compared to using a single-power MOSFET with similar specifications and package
- Easy drop-in replacement
- High efficiency and low losses
- Meets high temperature requirements

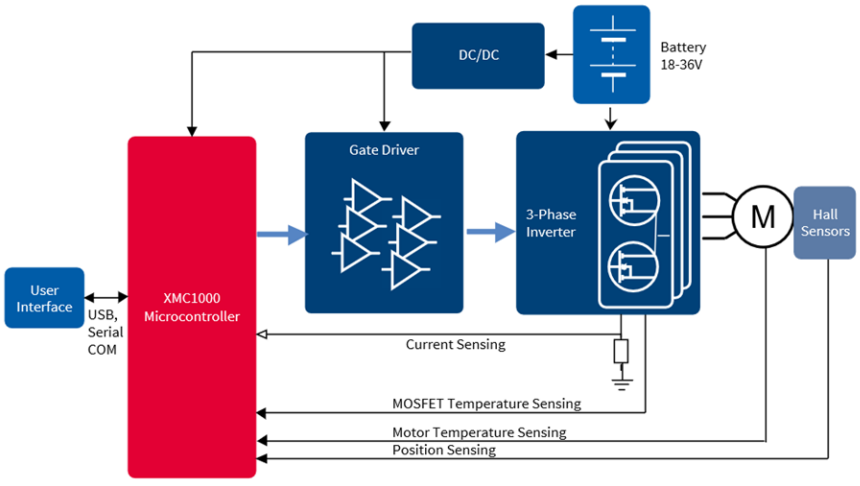
Target applications

- SMPS
- Inductive wireless charging
- Load switches
- Battery management systems
- LV drives

Competitive advantage

- Cost and space saving solution compared to using single-power MOSFETs

Application diagram: Battery powered application



Product collaterals / Online support

Product family page

Product page BSC072N04LDATMA1

Product page BSC076N04NDATMA1

Product page BSC112N06LDATMA1

Product page BSC155N06NDATMA1

Product overview incl. data sheet link

OPN	SP Number	Package
BSC072N04LDATMA1	SP002594350	PG-TDSON-8
BSC076N04NDATMA1	SP002594330	PG-TDSON-8
BSC112N06LDATMA1	SP002594372	PG-TDSON-8
BSC155N06NDATMA1	SP003883348	PG-TDSON-8

24V Automotive Gateway Board

The board features two powerful AURIX™ TC397 microcontrollers combined with the RTL9047AA automotive Ethernet switch from Realtek, offering multiple connectivity capabilities. The board operates in a 24V environment, voltage typically used in CAV and trucks.

Features

> 2x AURIX™ TC397 connected via 2 HSSL connections

> 24V compliant with high level of integration (can also operate in 12 V)

> Realtek RTL9047AA Automotive Eth. switch

> 16x CAN-FD, 4x LIN, 4x Flexray channels, 5x Ethernet 100Mbit with PoDL, 1x Ethernet 1 Gigabit

> Raspberry pi like extension header

> OPTIREG™ PMIC (TLF30682)

Benefits

> AURIX™ computing performance, flexibility, scalability, integrated safety and security support

> Specially designed for 24V architecture systems (CAV)

> Fast prototyping and minimization of R&D resources

> Multiple connectivity capabilities

Target applications

> CAV

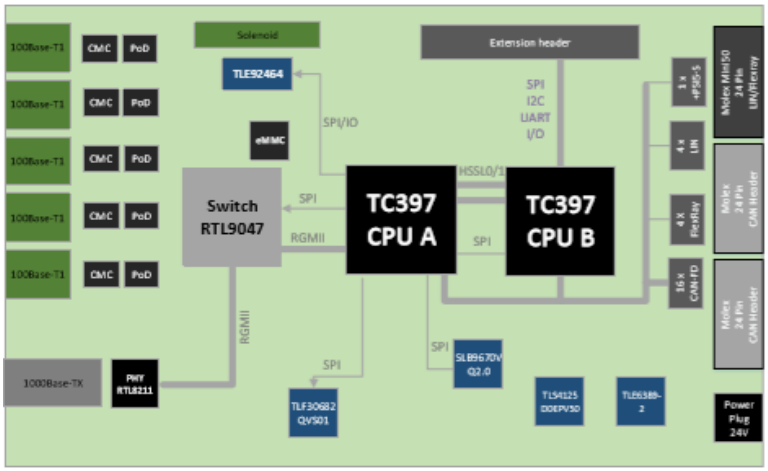
> Gateway

> Sensor fusion

Competitive advantage

> 24V compliant, multiple connectivity capabilities

Application diagram



Product collaterals / Online support

Product page

Product Brief

User manual

Product overview incl. User manual link

OPN	SP Number	Package
KITA2GTC39724VGTWTOBO1	SP005412760	board

XENSIV™ - TLE4988C Hall based camshaft sensors

The Infineon TLE4988C products feature advanced Camshaft sensing performance and improved application adaptivity. One major benefit of the advanced sensor performance is to reduce dependence on rare-earth backbias magnets for module manufacturers. The TLE4988C has proven right performance with a ferrite backbias magnet for all relevant parameters such as phase jitter, phase accuracy or speed effect across key temperature, air gap and rpm ranges.

With automatic in-car calibration a most accurate sensing in real application environment is ensured addressing tolerances of ferromagnetic wheels and magnetic encoders encoder as well as mounting tolerances of the sensor. The TLE4988C products as well allow to compensate for thermal or mechanical stress applied in the module manufacturing process. The embedded EEPROM can also feature a unique chip ID to allow logistic traceability (on request). A new high speed digital I/F allows a fast read out of registers for diagnosis or test purposes.

Features

- Digital output signal (voltage interface)
- TPO True Power On functionality
- Auto TPO – automatic in-car calibration
- Improved switching level / phase accuracy
- TC range including Ferrite
- High speed digital interface for diagnosis / test
- TIM Twisted Independent Mounting
- EEPROM for algorithm options and ID (on request)
- High ESD and EMC Immunity, improved µCut feature
- Digital magnet temperature compensation
- Mechanical stress compensation
- Module package PG-SSO-3-52

Benefits

- System cost benefit: High performance with ferrite backbias magnet
- Low design switch effort: Package compatibility with Infineon's predecessor products
- High adaptivity to application diversity and stress

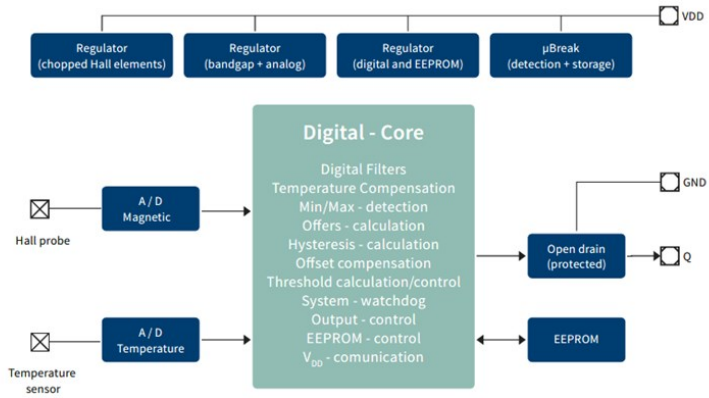
Competitive advantage

- Best-in-class performance with ferrite backbias magnet
- High backward compatibility

Target applications

- Camshaft speed and position sensing

Application diagram



Product collaterals / Online support

Product Family Page

Product Brief

Product overview incl. data sheet link

OPN	SP Number	Package
TLE4988CXTFM28HAMA1	SP005073030	PG-SSO-3
TLE4988CXTNM28HAMA1	SP005072956	PG-SSO-3
TLE4988CXTSM28HAMA1	SP001040468	PG-SSO-3

CoolSiC™ MOSFETs 1700 V in SMD package - the next level of simplicity and safety in high voltage auxiliary power supplies

Infineon´s first SiC MOSFET portfolio in 1700 V class is targeting the auxiliary power supply circuit, which generates power for control logic, displays and cooling fans in three-phase power systems. Industry´s preferred practice for such low-power application– the single-ended fly-back topology- can now be used even up to 1000 VDC input voltage. 1700 V blocking voltage eliminates design concerns on voltage stress margin and reliability of power supply. With SiC MOSFET technology, low on-resistance and device capacitances compared to 1500 V Si MOSFETs result in more than 50% loss reduction and enables compact SMD integration using natural convection cooling without a heatsink. The new 1700 V CoolSiC™ trench MOSFETs are optimized for fly-back topologies with +12 V / 0 V gate-source voltage compatible with common PWM controllers, and thus no need for a gate driver IC. The new D2PAK-7L package fulfills 1700 V safety requirements with >7 mm creepage and clearance distances, which minimizes isolation effort in the PCB design.

Features

- Optimized for fly-back topologies
- Extremely low switching loss
- 12 V / 0 V gate-source voltage compatible with common PWM controllers
- Fully controllable dV/dt for EMI optimization
- SMD package with enhanced creepage and clearance distances, > 7 mm

Benefits

- 1700 V SiC MOSFET enables simple single-ended fly-back topology at high efficiency level
- SMD integration into PCB, with natural convection cooling without extra heatsink
- Reduced isolation effort by extended creepage and clearance distances of package
- Reduced system complexity
- High power density

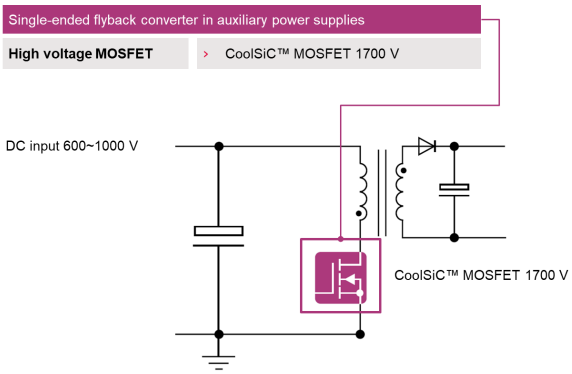
Target applications

- Solutions for solar energy systems
- Industrial drives
- Energy Storage Systems
- Fast EV charging
- Power supplies (SMPS)

Competitive advantage

- Infineon CoolSiC™ trench technology with superior gate oxide reliability
- Optimized for fly-back topologies with +12 V / 0 V gate-source voltage compatible with common PWM controllers
- Lowest device capacitances and gate charges seen in 1700 V switches
- Benchmark gate threshold voltage, VGS(th) >4 V
- New D2PAK-7L package with extended creepage and clearance distances for 1700 V safety requirements

Application diagram



Product collaterals / Online support

Product familiy page

Product overview incl. data sheet link

OPN	SP Number	Package
IMBF170R1K0M1XTMA1	SP002739692	PG-TO263-7
IMBF170R650M1XTMA1	SP002739686	PG-TO263-7
IMBF170R450M1XTMA1	SP002739682	PG-TO263-7

BGSA142 family - high RF Voltage Antenna Tuning SP4T Switches

The BGSA142xxx is a versatile direct mapping Single-Pole Quad Throw (SP4T) RF switch optimized for low C_{OFF} as well as low R_{ON} enabling applications up to 6.0 GHz. The device includes 4 low R_{ON} and high RF voltage ports making it ideal for antenna tuning and tunable matching network applications. RFC as well as RF1, RF2, RF3 and RF4 can handle high RF voltage (bidirectional RF Voltage handling). Due to its very high RF voltage ruggedness on all RF ports, it is suited for switching any reactive devices such as inductors and capacitors without significant losses.Unlike GaAs technology, the 0.1 dB compression point exceeds the switch maximum input power level, resulting in linear performance at all signal levels and external DC blocking capacitors at the RF ports are only required if DC voltage is applied externally.

Features

- Designed for high linearity and high RF voltage tuning applications
- Multiple selectable switch configurations:
  - each throw directly and independently controlled
- Low R_{ON} resistance of 1.75 Ω at each port in ON state
- Low C_{OFF} capacitance of 110 fF at each port in OFF state
- High RF operating voltage of 72 V at RFx and 67 V at RFC in OFF state
- Low harmonic generation
- MIPI 2.0 RFFE control interface (for MIPI version)
- 3 GPIO pins control interface (for GPIO version)
- 1.8V supply voltage support (1.65V min)
- No RF parameter change within supply voltage range
- Small form factor 1.5 mm x 1.5 mm (MSL1, 260° C per JEDEC J-STD-020)
- RoHS and WEEE compliant package

Benefits

- Performance stability over full temperature and power supply range
- Good small and large signal RF performance up to 6GHz

Competitive advantage

- Fulfils latest Qualcomm chipset (SD865) 1.8V nominal supply voltage rail requirement
- 4 USID addresses enabled by external condition at USID_sel pin and SCLK/SDATA swap mode (for MIPI devices)

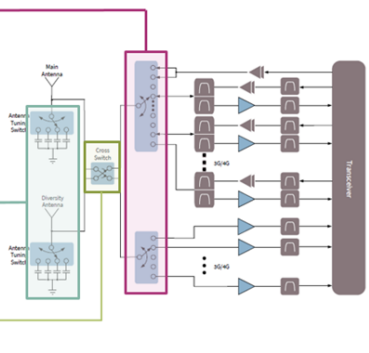
Target applications

- high-linearity and high RF voltage antenna tuning applications

Application diagram

Application Block Diagram for RF Front End in a mobile phone

RF Switches	
Main components	IFX product offering
› RF Switches	› BGS Family
Antenna Centric Devices	
Main components	IFX product offering
› Antenna Tuning	› BGSA 142M2N12 › BGSA 142MN12 › BGSA 142GN12
Antenna Centric Devices	
Main components	IFX product offering
› Cross Switch	› BGSX Family



Product collaterals / Online support

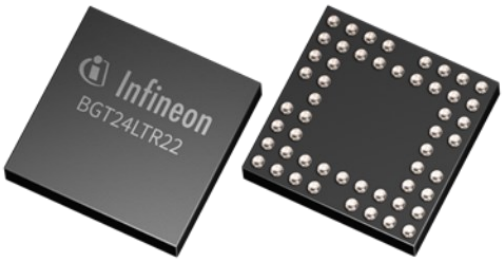
Product Family Page

Product overview incl. data sheet link

OPN	SP Number	Package
BGSA142M2N12E6327XTSA1	SP001666150	PG-TSNP-12
BGSA142MN12E6327XTSA1	SP003597098	PG-TSNP-12
BGSA142GN12E6327XTSA1	SP003597102	PG-TSNP-12

XENSIV™ 24GHz multichannel radar sensor BGT24LTR22 for distance and angle measurement

BGT24LTR22 is a low power, low noise multi-channel Silicon Germanium transceiver MMIC for 24 GHz radar applications. It provides building blocks for analog signal generation and reception, operating in the frequency range from 24.0 GHz up to 24.25 GHz. The device supports multiple modulation schemes including FMCW and Doppler. Integrated digital blocks controlling the chip are implemented in order to support radar system design.



Features

- 24GHz transceiver MMIC
- Fully integrated low phase noise VCO
- Integrated Baseband amplifiers (can be bypassed)
- Small footprint 3.6 x 3.6 mm^2
- Bi directional Transmitter pin for synchronization of multiple chips
- Built in temperature compensation circuit for VCO stabilization
- Low power consumption
- Fully ESD protected device
- Single ended RF and IF terminals
- Single supply voltage 1.5 V

Benefits

- Fully integrated low phase noise VCO → high detection sensitivity
- Integrated Baseband amplifiers (can be bypassed) → reducing BOM costs
- Small footprint 3.6 x 3.6 mm^2 → saves valuable RF pCB area
- Bi directional Transmitter pin for synchronization of multiple chips → can connect multiple chips easily to get higher angular resolution
- Built in temperature compensation circuit for VCO stabilization → no PLL required for Doppler mode
- Low power consumption → for battery driven applications
- Fully ESD protected device → robust to handling and assembly
- Single ended RF and IF terminals → simplifies matching structure on the RF pCB
- Single supply voltage 1.5 V → simplifies power supply architecture

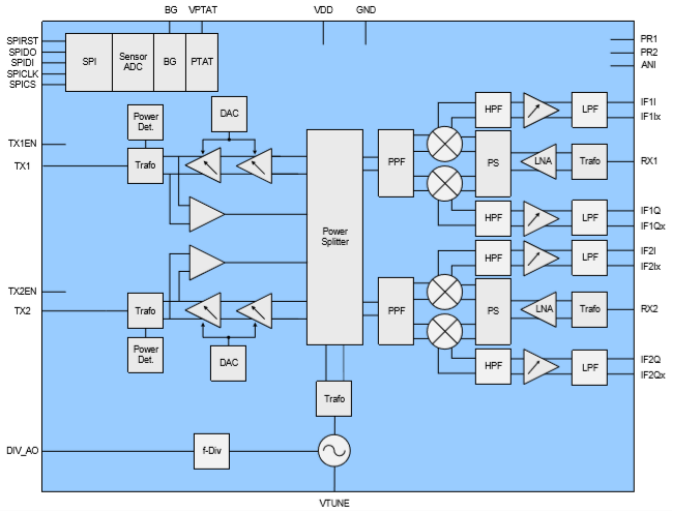
Target applications

- Drones
- Outdoor security
- People tracking
- Traffic monitoring

Competitive advantage

- Smallest foot print
- Cascadable
- Low power consumption

Block diagram



Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
BGT24LTR22E6327XTSA1	SP001722518	PG-WFWLB-52
EVALBGT24LTR22TOBO1	SP003094688	board

650 V CoolMOS™ CFD7A - high-voltage superjunction MOSFETs for automotive applications

Infineon's silicon-based 650 V CoolMOS™ high-voltage SJ power MOSFETs CFD7A are specifically optimized to meet the requirements for electric-vehicle applications such as on-board chargers, HV-LV DC-DC converters, and auxiliary power supplies. With more than 10 years of automotive experience, CoolMOS™ CFD7A combines highest quality going well beyond the AEC-Q101 standards with unrivalled technology expertise.

The CoolMOS™ CFD7A family is manufactured on the highly automated 300 mm production line, which contributes to reach the zero-defect target in mass production while fulfilling the growing market demand.

Features

- Battery voltages up to 475 V without compromising on reliability standards
- Efficiency improvements in hard- and soft-switching topologies up to 98.4%
- Kelvin-source concept for further efficiency improvement
- Intrinsic fast body diode with -30% lower Q_{rr} compared to CoolMOS™ CFDA

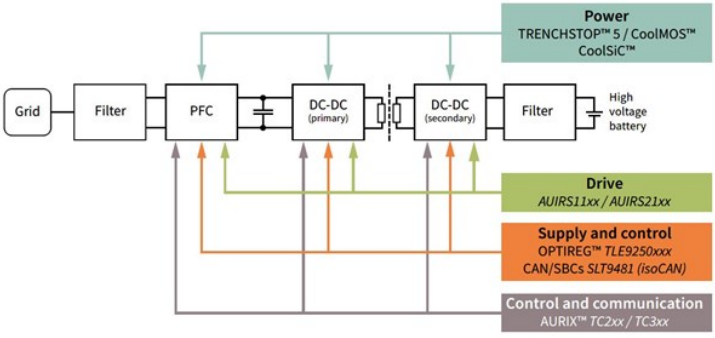
Benefits

- Highest reliability in the field meeting automotive lifetime requirements
- Enabling higher power density designs
- Scalable as designed for use in PFC and DC-DC stage
- Granular portfolio available

Target applications

- On-board charger
  - Hard-switching topologies (with SiC diode)
  - PFC boost stages
  - DC-DC stage of OBC
- HV-LV DC-DC converter
  - LLC or full-bridge phase shift (ZVS)
- Auxiliary power supplies

Application diagram: On-board charger



Product collaterals / Online support

Product Family Page

Product Brief

Application Note

Product overview incl. data sheet link

OPN	SP Number	Package
IPBE65R115CFD7AATMA1	SP002561838	PG-TO263-7
IPB65R115CFD7AATMA1	SP002561832	PG-TO263-3
IPB65R050CFD7AATMA1	SP003793200	PG-TO263-3
IPB65R230CFD7AATMA1	SP003783094	PG-TO263-3

EVAL_AUDAMP24 - Single-ended, 2-channel CoolGaN™ class D amplifier for premium audio applications

The EVAL_AUDAMP24 e-mode GaN HEMT-based evaluation board is a 2-channel, 225 W/ch (4 Ω at ±43 V) or 250 W/ch(8 Ω at ±63 V) half-bridge class D audio power amplifier for high-end Hi-Fi audio systems. This evaluation board demonstrates how to use the IGT40R070D1 E8220 CoolGaN™ gallium nitride transistor together with the MERUS™ IRS20957SPBF controller IC, implement protection circuits, and design an optimum PCB layout. The reference design provides all the required housekeeping power supplies for ease of use. The 2-channel design is scalable for power and the number of channels.

Features

- Output power:
  - 225 W x 2 channels (1% THD+N, 4 Ω at ±43 V)
  - 250 W x 2 channels (1% THD+N, 8 Ω at ±63 V)
- Multiple protection features:
  - Overcurrent protection (OCP), high- and low-side e-mode GaN transistors
  - Overvoltage protection (OVP)
  - Undervoltage protection (UVP), high- and low-side e-mode GaN transistors
  - Overtemperature protection (OTP)
- PWM modulator: Self-oscillating half-bridge topology with optional clock synchronization

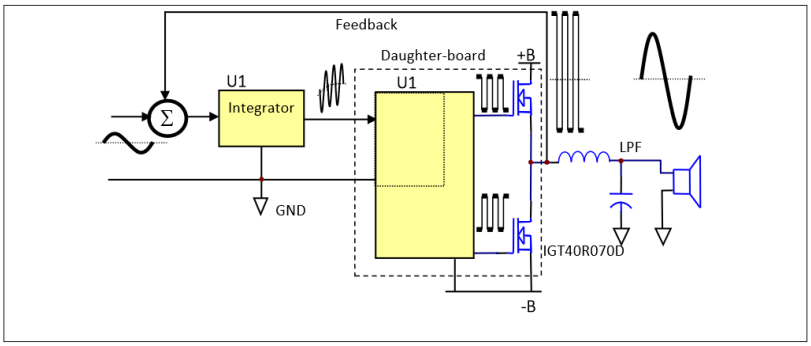
Benefits

- Clean switching performance
- Narrow deadtime for better THD
- Easy to use: compatible with the MERUS™ IRS20957SPBF class D controller
- Outstanding audio quality
- High reliability

Target applications

- Hi-Fi amplifiers
- AV receivers
- Home theater systems
- Powered speakers
- Musical instrument amplifiers

Block diagram



Product collaterals / Online support

Product page

Product brief

Application brochure

Application note

Product overview incl. Quick start guide link

OPN	SP Number	Package
EVALAUDAMP24TOBO1	SP005409556	board

EVAL_2KW_48V_CHAR_P7 - 48 V lead-acid/Li-ion battery charger 2kW high efficient natural convection cooled evaluation board based on CoolMOS™ P7

The 2 kW lead-acid / Li-ion industrial battery charger targets LSEV applications. The evaluation board uses a dual-boost PFC + half-bridge LLC power supply solution. Infineon's latest CoolMOS™ P7 Superjunction MOSFET enables natural convection cooling. The design has a battery management control system capable of charging both lead-acid and Li-ion based 48 V batteries in the different charging modes. The charging profiles correspond to the latest trends of battery charging. Furthermore, the evaluation board offers the possibility to set the nominal battery capacity in order to adjust the charging currents of different battery sizes. In addition to this, it grants a parallel operation of two modules that can extract 4 kW maximum charging power. This enables fast charging for Li-ion batteries.

The 2 kW evaluation board is designed to operate at a wide range input from 90 V_{AC} up to 265 V_{AC} to charge lead-acid and Li-ion batteries of 48 V_{DC}. The charger also gives the possibility for a battery capacity selection (from 40 Ah up to 250 Ah). The design comes with an integrated error indication and handling system. It is programmed not only to de-rate output power at PCB temperature of 105°C and shutdown at 115°C, but it also adopts the charging profile by sensing the battery voltage and temperature.

Features

- Wide range input operation: 90 V_{AC} - 265 V_{AC}
- Capable of charging lead-acid and Li-ion batteries
- Battery capacity selection (40 Ah, 60 Ah, 80 Ah, 100A h, 125 Ah, 150 Ah, 200 Ah, 250 Ah)
- Parallel operation
- Battery temperature sensor
- Continuous full power at an ambient temperature of 45°C
- Reverse battery protection
- Short circuit protection
- Deactivated under-voltage monitoring and shut off

Benefits

- High efficiency: 94.5% at full load
- Natural convection cooling
- Portable unit

Target applications

LSEV battery charger for

- E-bikes and pedelecs
- E-rickshaws and e-scooters
- Forklifts and e-cars
- Micro e-cars

Product collaterals / Online support

Product Page

3D Model

Application Note

Product overview incl. Quick start guide link

OPN	SP Number	Package
EVAL2KW48VCHARP7TOBO1	SP004807206	board

EVAL_AUDIO_I2S_COM - I²S interface board for EVAL_AUDIO_MA12040P and EVAL_AUDIO_MA12070P

The universal I²S interface board is an add-on board intended to use with the EVAL_AUDIO_MA12040P and EVAL_AUDIO_MA12070P Class D audio amplifier boards.

The I²S interface board converts either analog or digital S/PDIF audio into an I²S format that matches the default settings of the EVAL_AUDIO_MA1240P/MA12070P boards.

Features

- Support for three different input signal options:
  - Analog audio input via the on-board 3.5 mm jack connector
  - Digital audio input via the on-board RCA connector
  - Digital audio input via the on-board Optical connector
- The analog and digital input options are selected with a small switch on the board.
- The two digital input options are selectable with a small jumper wire connector on the board.
- A board to board connector interfaces the board to the evaluation board and also provides its 3.3 V power supply.

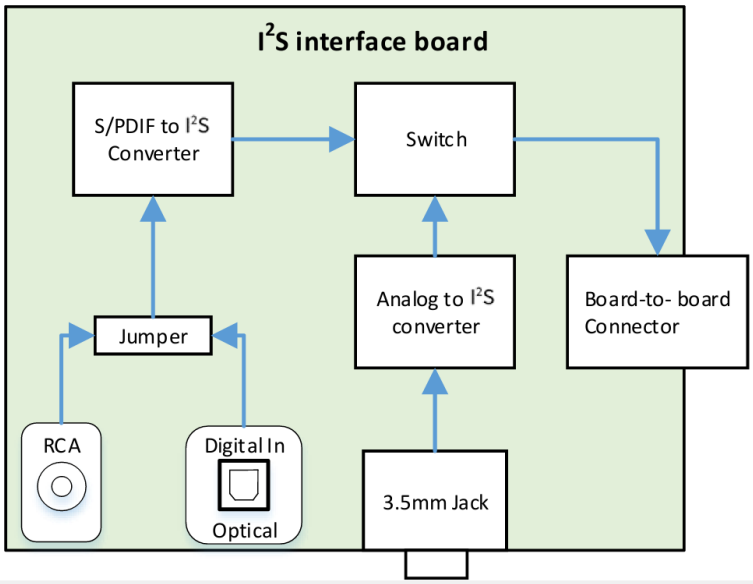
Benefits

- Support for both analog and digital input sources
- I²S format digital output that seamlessly connect to the Infineon digital input Class D amplifier evaluation boards
- No additional power supply needed (powered through the connected evaluation board)
- Easy to setup and use – no software installation required

Target applications

- Audio

Application diagram



Product collaterals / Online support

Product Page

Quickstart guide

Product overview incl. Quick start guide link

OPN	SP Number	Package
EVALAUDIOI2SCOMTOBO1	SP005411843	board

2ED28073J06F - 600 V half-bridge gate driver IC

600 V half-bridge gate driver IC with integrated bootstrap diode with typical 0.02 A source and 0.08 A sink currents in DSO-8 package for driving MOSFETs including fast body diode CoolMOS™ PFD7 super junction MOSFETs and IGBTs.

The 2ED28073J06F is a high voltage, high speed power MOSFET and IGBT driver with dependent high and low side referenced output channels. Proprietary HVIC and latch immune CMOS technologies enable ruggedized monolithic construction. The logic input is compatible with standard CMOS or LSTTL output, down to 3.3 V logic. The output drivers feature a low di/dt output stage optimized to drive CoolMOS™ PFD7 in motor drive applications. The floating channel can be used to drive N-channel power MOSFETs or IGBTs in the high side configuration which operates up to 600 V.

Features

- Negative VS transient immunity of 70 V, dV/dt immune
- Lower di/dt gate driver for better noise immunity
- Floating channel designed for bootstrap operation
- Operating voltages (VS node) upto + 600 V, Delay matching = 50 ns max.
- Maximum bootstrap voltage (VB node) of + 625 V, Deadtime (typ.) = 300 ns
- Integrated bootsrap diode, tON / tOFF (typ.) = 530 ns/ 530 ns
- Integrated shoot-through protection with built-in dead time
- Integrated short pulse / noise rejection filter on input
- Independent under voltage lockout for both high and low side
- Schmitt trigger inputs with hysteresis
- 3.3 V, 5 V and 15 V input logic compatible Maximum supply voltage of 25 V
- Outputs in phase with inputs
- Suitable for both trapezoidal and sinusoidal motor control
- Available in small footprint DSO-8

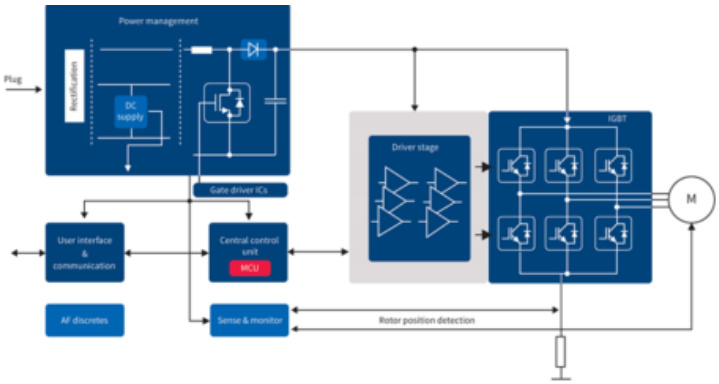
Benefits

- Better noise immunity due to optimized low di/dt output stage
- Integrated Bootstrap Diode for reduced BOM cost
- -70 V negative VS increases reliability and robustness
- Latch-up immune increased reliability
- Flexible, small PCB footprint, and easy to use device

Target applications

- MHA
- Low power drives
- Fans, pumps, compressors
- Refrigeration compressors
- Air conditioner fans
- Washing machines and dishwasher pumps
- General purpose inverters

Application diagram



Product collaterals / Online support

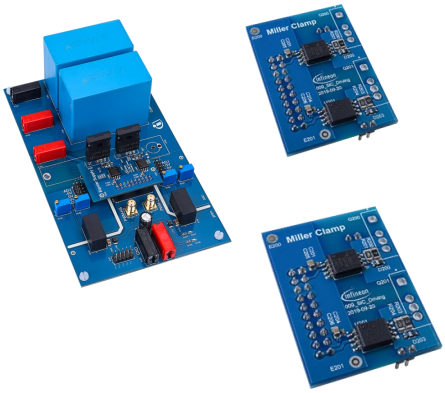
Product page

Solution finder

Product overview incl. data sheet link

OPN	SP Number	Package
2ED28073J06FXUMA1	SP005347726	PG-DSO-8

CoolSiC™ MOSFET 1200 V in TO-247 3-/4-pin evaluation platform



The CoolSiC™ MOSFET 1200 V evaluation platform including EiceDRIVER™ gate driver IC was developed to show the driving options of the silicon carbide CoolSiC™ MOSFET in TO247 3-pin and 4-pin. To show these options, the design was split into one motherboard and currently, two drive cards. The modular approach was chosen to allow the platform to be expanded with new drive cards in the future.
The first drive card contains the EiceDRIVER™ 1EDC Compact 1EDC20I12MH with an integrated active Miller clamp preventing parasitic turn-on.
The second drive card includes the EiceDRIVER™ 1EDC Compact 1EDC60H12AH allowing a bipolar supply, where VCC2 is +15 V and GND2 is negative.
The motherboard was designed for a maximum voltage of 800 V and a maximum pulsed current of 130 A. More drive cards with different driver ICs and CoolSiC™ MOSFETs are planned.

Features

- VCC2 gate drive voltage supply from -5 V to +20 V
- VCC1 supply fixed at +5 V
- Gate connection via SMA-BNC connector
- Current measurement via optional coaxial shunt
- Optimized commutation loop
- External load inductor connection
- Heatsink design allows testing at various temperatures

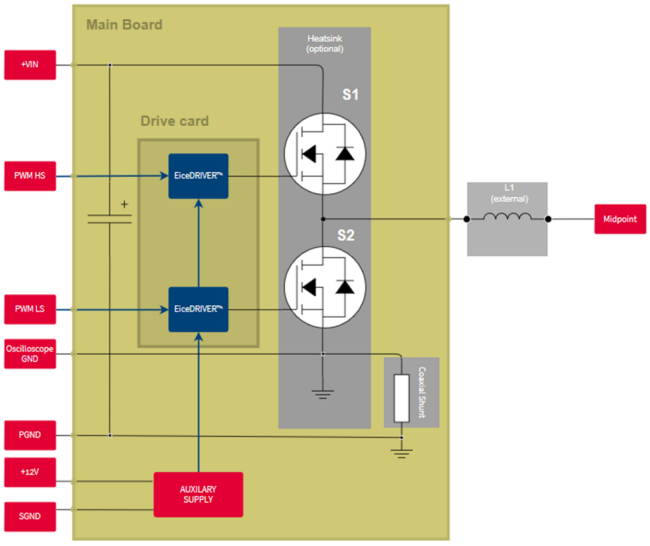
Benefits

- Customer can use the drive card layout as a reference for their own designs
- It is possible to benchmark all TO-247 3-pin and 4-pin packages (independent from base material technology or manufacturer)
- A modular approach of the motherboard allows future extensions of the platform

Target applications

Double pulse testing (suitable for all applications that are using discrete Devices in TO-247 packages)

Application diagram



Product collaterals / Online support

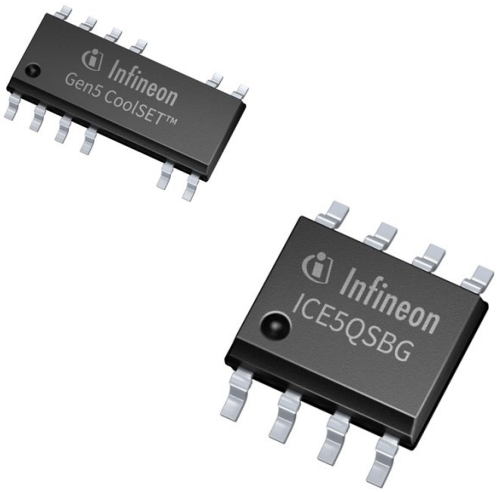
Product page

Application note

Product overview incl. data sheet link

OPN	SP Number	Package
EVALPSSICDPMAINTOBO1	SP005412616	board
REFPSSICDP1TOBO1	SP005412618	board
REFPSSICDP2TOBO1	SP005412619	board

5th generation quasi-resonant flyback controller IC and CoolSET™



The new generation of PWM controller and CoolSET™ products is targeting the auxiliary SMPS function block for applications such as telecom, server, PC power, and major home appliances to optimize cost and performance. The ICE5QSBG is a standalone flyback controller IC with a quasi-resonant switching scheme to be used in conjunction with an external high-voltage MOSFET. With the CoolSET™ ICE5QRxx80BG products, Infineon offers a combined version with integrated high-voltage CoolMOS™ P7 superjunction MOSFETs as well. The new CoolSET™ products are in a DSO-12 SMD package and thereby eliminate the need of heatsink and reduce BOM count with a small footprint.

Features

- Integrated 800 V CoolMOS™ superjunction MOSFET with avalanche capability
- Comprehensive suite of protection which includes input OVP, brown-in/-out, pin short to GND and OTP with hysteresis
- Innovative quasi-resonant switching scheme to minimize frequency spread under different line input conditions

Benefits

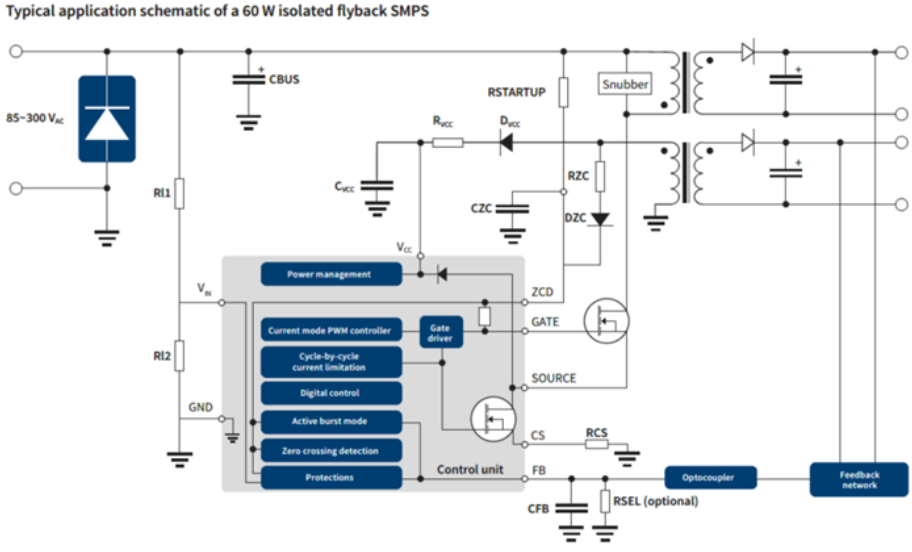
- High efficiency with the latest CoolMOS™ P7 family and the quasi-resonant switching scheme
- Auto-restart recovery scheme to minimize interruption to system operation
- Extensive protection coverage to increase system robustness
- Rapid start-up performance with cascode configuration

Target applications

- AUX power
- Major home appliances
- Adapter

Application diagram

Typical application schematic of a 60 W isolated flyback SMPS



Product collaterals / Online support

Product Family Page

Product Brief

Product overview incl. data sheet link

OPN	SP Number	Package
ICE5QSBGXUMA1	SP003743302	PG-DSO-8
ICE5QR2280BGXUMA1	SP005402577	PG-DSO-12
ICE5QR4780BGXUMA1	SP005402571	PG-DSO-12
ICE5QR1680BGXUMA1	SP005402580	PG-DSO-12
ICE5QR0680BGXUMA1	SP003540048	PG-DSO-12