



New Product Introduction

December 2023

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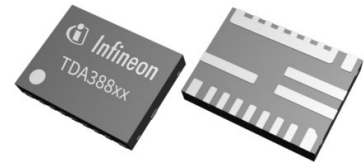
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[REF-SHA35IMD111TSYS](#)

20 A, 12 A high performance, fast COT synchronous buck converters

20 A, 12 A fully integrated and highly efficient DC-DC buck regulator family using fast constant-on-time (COT) control scheme. Simplifies design efforts and achieves fast transient response while maintaining excellent line and load regulation. It can operate over a wide range of V_{in} (2.7 V to 16 V) and support V_{out} from 0.6 V to 5.5 V



Features

- > Wide V_{in} range: 4 V to 16 V with internal bias and 2.7 V to 16 V with external VCC (3.3 V)
- > Precision reference voltage (0.6 V +/- 0.5%)
- > Stable with ceramic output capacitors
- > No external compensation
- > Optional forced continuous conduction mode and diode emulation for enhanced light load efficiency
- > Selectable switching freq from 600 kHz, 800 kHz, and 1 MHz
- > Programmable soft-start time with a min of 1 ms & enhanced pre-bias start-up
- > Voltage tracking with external reference input
- > Programmable over current protection limit with internal thermal compensation
- > Enable input with voltage monitoring capability
- > Power good output
- > Non-latch OCP, UVP, thermal shutdown, and Latch-off OVP
- > Operating temp: $-40^{\circ}\text{C} < T_j < 125^{\circ}\text{C}$
- > Small size: 3 mm x 4 mm QFN-21
- > Lead-free, halogen-free and RoHS compliant

Benefits

- > Fast COT engine provides industry best transient response
- > Internal compensation simplifies design effort and tuning
- > Full suite of protection features results in a robust and reliable design

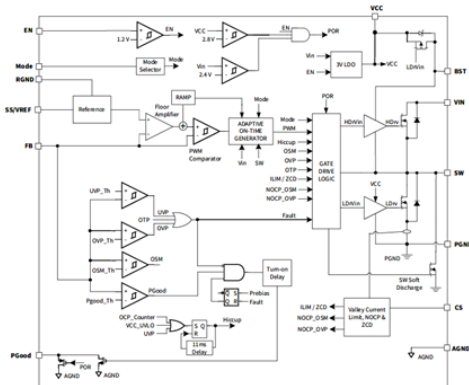
Target applications

- > Server
- > Storage
- > Telecom & Datacom
- > Distributed point of load power architecture

Competitive advantage

- > Total solution sell with multiphase products
- > Excellent transient response
- > Infineon quality and reliability

Block diagram



Product overview incl. data sheet link

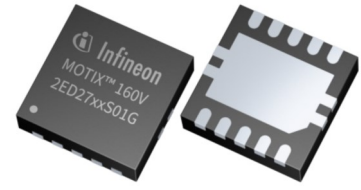
Product collaterals / Online support

[Product family page](#)

OPN	SP Number	Package
TDA38812AUMA1	SP005407838	PG-TSNP-21
TDA38813AUMA1	SP005417483	PG-TSNP-21
TDA38825AUMA1	SP005407833	PG-TSNP-21
TDA38826AUMA1	SP005538223	PG-TSNP-21

160 V HB and HS+LS SOI gate driver ICs with integrated bootstrap diode

MOTIX™ 160 V HB and HS+LS SOI (Silicon on Insulator) based gate driver ICs with 2 different source/sink currents in a small footprint VSON10, 3x3 mm package for N-Channel MOSFETS. Integrated bootstrap diodes (38 Ω typ.) are used to supply the external high side bootstrap capacitor. Protection features include under voltage lockout (UVLO) on both V_{CC} and V_B pins, and half bridge solution supports shoot through protection (STP) function. This MOTIX™ 160 V solution is fully qualified for industrial applications according to the relevant tests of JEDEC78/20/22.



Features

- > Bootstrap voltage (V_B) of +160 V
- > Floating designed for bootstrap
- > Integrated bootstrap diodes
- > UVLO for both high and low side
- > Short Pulse/ noise input filter
- > Schmitt trigger inputs
- > 3.3 V, 5 V input logic compatible

Benefits

- > High power density
- > Smaller footprints
- > High durability and reliability
- > Excellent thermal management
- > Scalability
- > Simplicity (easy to use)

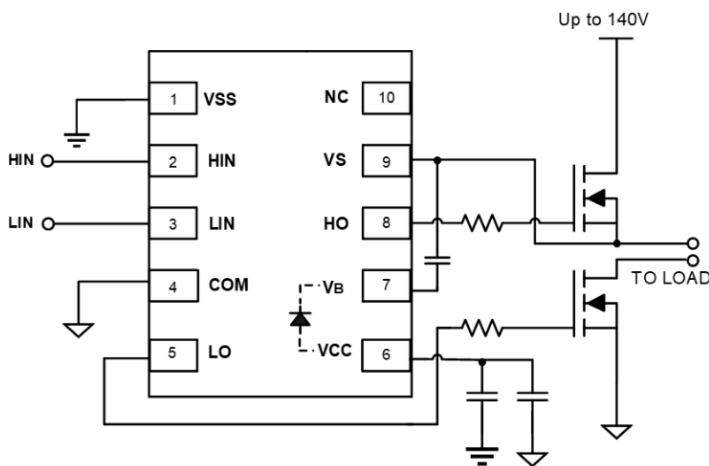
Target applications

- > Cordless power tool
- > Battery-powered tool
- > Multicopters and drones
- > Micro-inverter-solutions

Competitive advantage

- > Superior NTSOA for robustness and reduced BOM
- > Able to support up to 120 V batteries
- > Integrated BSD for reduced BOM

Block diagram



Product collaterals / Online support

[Product family page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
2ED2732S01GXTMA1	SP005567435	PG-VSON-10
2ED2738S01GXTMA1	SP005567443	PG-VSON-10
2ED2742S01GXTMA1	SP005567412	PG-VSON-10
2ED2748S01GXTMA1	SP005567441	PG-VSON-10

XHP™ 4.5 kV dual IGBT module with TRENCHSTOP™ IGBT4



These low inductive XHP™ 4.5 kV modules with AISiC baseplate and AlN substrate are perfect for 3-level applications to significantly improve the efficiency of design in drives or transportation by saving at least 25% on system cost level and size. Hereby a 3300 V DC MVD system can be downsized without losing performance and reliability.

Features

- > High DC stability
- > High short-circuit capability
- > High surge current capability
- > Unbeatable robustness
- > $T_{Vjop} = 150^{\circ}\text{C}$
- > AISiC base plate for increased CTI > 600
- > Fire & smoke EN45545 R22, R23, R24: HL2

Benefits

- > Low inductive module
- > Enables clean electrical design
- > Enables clean mechanical design
- > Easy set-up of 3-level NPC1 topology
- > Easy set-up of parallel configuration
- > Better scalability, on smaller steps
- > Better match to various power levels
- > Smoother logistics handling and stocking
- > Enables downsizing on system level

Target applications

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

Competitive advantage

- > The first of its kind 4.5 kV half-bridge IGBT Module is the key enabler to the global trend of integrated drives >3000 V DC: 25% lower system cost at 25%-size decrease speak for itself

Product collaterals / Online support

[Product page: FF450R45T3E4_B5](#)

[Product page: DD450S45T3E4_B5](#)

Product overview incl. data sheet link

OPN	SP Number	Package
FF450R45T3E4B5BPSA1	SP005915046	AG-XHP3K45-461
DD450S45T3E4B5BPSA1	SP005915052	AG-XHP3K45-4461

Easy modules with CoolSiC™ MOSFET for 1200 V drives application

EasyDUAL™ 1B and EasyPACK™ 1B with CoolSiC™ MOSFET enhanced generation 1 for 1200 V applications. These modules come with PressFIT contact technology and NTC. They are also available with pre-applied thermal interface material and AlN / Al₂O₃ substrates.



Features

- > Wide RBSOA
- > Very low stray inductance
- > Enlarged gate drive voltage window
- > PressFIT pins

Benefits

- > Extended maximum gate-source voltage of +23 V and -10 V
- > T_{vjop} under overload condition with up to 175°C
- > Best cost-performance ratio which leads to reduced system costs
- > Enabling high frequency operation and improvement for reduced cooling requirements

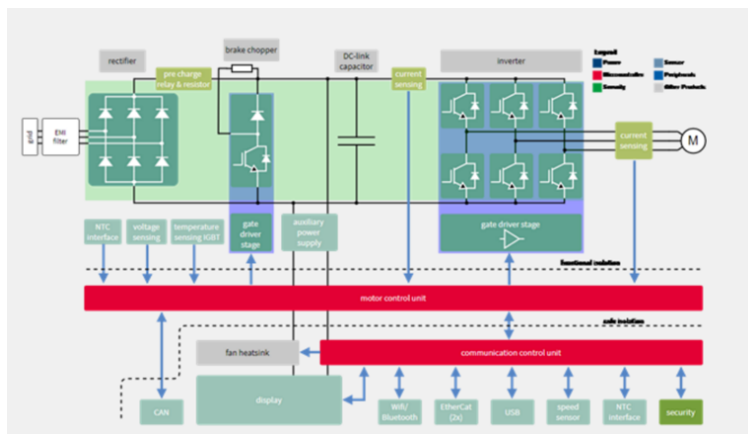
Target applications

- > EV charging
- > Industrial motor drives and controls
- > Servo motor drive and control

Competitive advantage

- > Broader portfolio in six-pack and half bridge configuration
- > Extended power ratings
- > Flexibility in terms of having the module with or without TIM
- > Availability in standard and high performance ceramic

Block diagram



Product collaterals / Online support

- [Product page: FS33MR12W1M1H_B11](#)
- [Product page: FS13MR12W2M1H_B70](#)
- [Product page: FS28MR12W1M1H_B11](#)
- [Product page: FF55MR12W1M1H_B11](#)
- [Product page: FF55MR12W1M1H_B70](#)

Product overview incl. data sheet link

OPN	SP Number	Package
FS33MR12W1M1HB11BPSPA1	SP005634434	AG-EASY1B-3111
FS13MR12W2M1HB70BPSPA1	SP005561073	AG-EASY2B-3111
FS28MR12W1M1HB11HPSPA1	SP005634666	AG-EASY1B-3111
FF55MR12W1M1HB11BPSPA1	SP005634439	AG-EASY1B-3111
FF55MR12W1M1HB70BPSPA1	SP005852782	AG-EASY1B-3111

Easy modules with CoolSiC™ MOSFET for EV charging, UPS and Fuel Cell DC/DC



EasyDUAL™ 1B and 2B CoolSiC™ MOSFET half-bridge modules for 1200 V applications with PressFIT contact technology and integrated NTC temperature sensor. Also available AlN / Al₂O₃ substrates.

Features

- > Best-in-class packages with 12 mm height
- > Leading edge WBG material
- > Very low module stray inductance
- > CoolSiC™ MOSFET 1200 V
- > Enhanced CoolSiC™ MOSFET Gen 1
- > Enlarged gate drive voltage window from 15 to 18 & 0 to -5 V
- > Extended maximum gate-source voltages
- > Gate-source voltages of +23 V and -10 V
- > T_{vjop} up to 175 °C in overload condition to cover failure events and for even higher power density
- > Integrated NTC temperature sensor

Benefits

- > Outstanding module efficiency
- > System cost advantages
- > System efficiency improvement
- > Reduced cooling requirements
- > Enabling higher frequency
- > Increase of power density

Competitive advantage

- > Full and complete half bridge portfolio with standard and high performance ceramic
- > Expand power rating in existing footprint

Target applications

- > EV Charger
- > UPS
- > Fuel Cell

Product collaterals / Online support

[Product page: FF8MR12W1M1H_B11](#)

[Product page: FF8MR12W1M1H_B70](#)

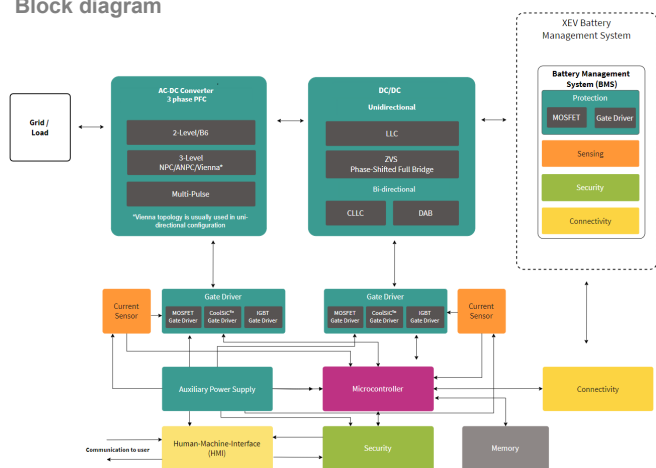
[Product page: FF6MR12W2M1H_B11](#)

[Product page: FF6MR12W2M1H_B70](#)

[Product page: FF4MR12W2M1H_B11](#)

[Product page: FF4MR12W2M1H_B70](#)

Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
FF8MR12W1M1HB11BPASA1	SP005634498	AG-EASY1B-3111
FF8MR12W1M1HB70BPASA1	SP005634508	AG-EASY1B-311
FF6MR12W2M1HB11BPASA1	SP005630352	AG-EASY2B-3111
FF6MR12W2M1HB70BPASA1	SP005634617	AG-EASY2B-3111
FF4MR12W2M1HB11BPASA1	SP005751859	AG-EASY2B-3111
FF4MR12W2M1HB70BPASA1	SP005749125	AG-EASY2B-3111

EconoDUAL™ 3 with TRENCHSTOP™ IGBT7 1700 V



Next to our lead types with 225 A, 750 A and 900 A we extended our portfolio of EconoDUAL™ 3 power modules 1700 V with TRENCHSTOP™ IGBT7 chip technology.

The roll out includes additional current ratings ranging from 300 - 750 A.

Features

- > TRENCHSTOP™ IGBT7 technology
- > Improved EconoDUAL™ 3 housing
- > Lower conduction and switching losses
- > Higher inverter output current for the same frame size
- > Reduced system costs by avoiding paralleling of the modules

Benefits

- > Higher inverter output current for the same frame size
- > Avoidance of paralleling of IGBT modules
- > Reduced system costs by simplification of the inverter systems
- > Easy and most reliable assembly

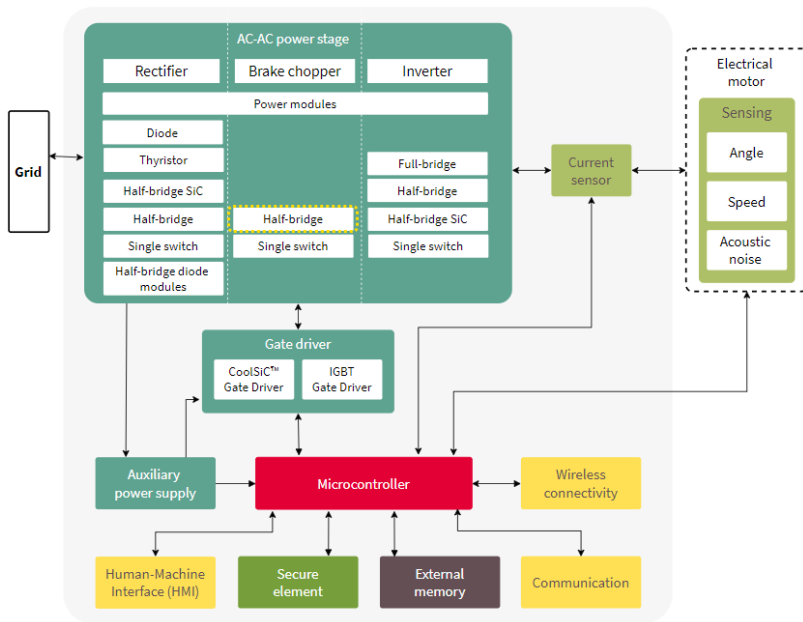
Target applications

- > Motor control and drives
- > Power transmission and distribution
- > Wind

Competitive advantage

- > The FF600R17ME7_B11 out-performs the FF600R17ME4_B11 thanks to lower switching and conduction losses:
 - > by 44% when overload capability is used
 - > by 29% when compared at $T_{vj} = 150^{\circ}\text{C}$

Block diagram



Product collaterals / Online support

[Product page FF300R17ME7_B11](#)

[Product page FF450R17ME7_B11](#)

[Product page FF600R17ME7_B11](#)

Product overview incl. data sheet link

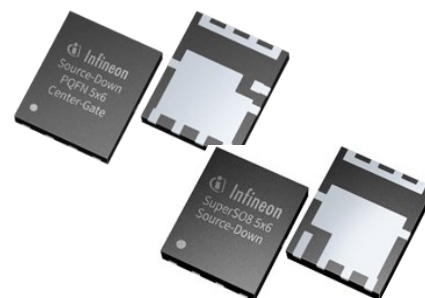
OPN	SP Number	Package
FF300R17ME7B11BPSA1	SP005733969	AG-ECONOD-711
FF450R17ME7B11BPSA1	SP005734536	AG-ECONOD-711
FF600R17ME7B11BPSA1	SP005733973	AG-ECONOD-711
FF750R17ME7B11BPSA1	SP005733979	AG-ECONOD-711

OptiMOS™ power MOSFETs 25 V - 150 V in PQFN 5 x 6 mm² Source-Down Corner-Gate and Center-Gate

Infineon's OptiMOS™ low- and medium-voltage power MOSFETs in an innovative and improved PQFN 5x6 mm² Source-Down package are presented to the market. The key feature of the Source-Down package is the orientation of the active side of the silicon chip toward the bottom side of the component. In combination with the reinforced clip on the drain side on top of the silicon chip, package parasitics are significantly reduced and thermal performance is pushed to the next level of improvement.

The OptiMOS™ power MOSFETs 25 V-150 V in PQFN Source-Down 5 x 6 mm² package in Corner-Gate.

The Source-Down package enables the lowest $R_{DS(on)}$ per footprint area and outstanding thermal performance, giving large potential for improvements on a system level, like BOM-cost reduction, easy thermal management with less active cooling required, improvement of power density and efficiency.



Features

- > Cutting edge silicon technology OptiMOS™ with outstanding FOMs
- > Source-Down package with improved thermal performance and ultra-low parasitics
- > Source-Down package with maximized chip / package ratio
- > Source-Down package in Center-Gate and Corner gate footprint

Target applications

- > Telecom
- > Server
- > Drones
- > Robotics
- > Solar
- > Low voltage drives
- > Light electric vehicles
- > Power tools
- > Battery management system

Benefits

- > Minimized conduction losses
- > Reduced voltage overshoot
- > Increased maximum current capability
- > Fast switching
- > Less device paralleling required
- > Corner-Gate footprint easily adapts existing PCB
- > Center-Gate footprint enables optimized parallelization
- > Lowest possible $R_{DS(on)}$ on 5 x 6 mm² PCB real-estate
- > Improved thermal performance for easy thermal management
- > Lowest package parasitics for best switching performance
- > Industry standard package

Product collaterals / Online support

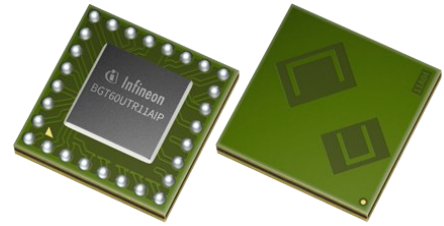
[Product family page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
IQDH29NE2LM5ATMA1	SP005903779	PQFN
IQDH35N03LM5ATMA1	SP005903785	PQFN
IQDH45N04LM6ATMA1	SP005903798	PQFN
IQDH88N06LM5ATMA1	SP005903793	PQFN
IQD005N04NM6ATMA1	SP005903813	PQFN
IQD009N06NM5ATMA1	SP005903829	PQFN
IQD016N08NM5ATMA1	SP005903807	PQFN
IQD020N10NM5ATMA1	SP005903816	PQFN
IQD063N15NM5ATMA1	SP005903825	PQFN

XENSIV™ BGT60UTR11AIP - highly integrated 60 GHz FMCW radar sensor

The XENSIV™ BGT60UTR11AIP is a highly integrated 60 GHz FMCW radar sensor designed for consumer electronics and IoT applications. With its compact size of only 16 mm² it is well-suited for small devices. The chip has been optimized for low power consumption and system cost optimization. The sensor operates at a 5.6 GHz ultra-wide bandwidth, enabling high-resolution FMCW operations for precise motion detection up to a range of 15 m, presence sensing as well as vital signs detection.



Features

- > 60 GHz radar operating with up to 5.6 GHz bandwidth and ramp speed of up to 400 MHz/μs
- > Antenna in package (AIP) with ±60° Field of View (FoV).
- > Integrated finite state machine (FSM) for low power consumption and real-time operation
- > 4 MSps ADC sampling rate
- > Single 50 MHz SPI for chip configuration and data transfer
- > Broadcast mode to trigger and configure multiple devices
- > Automotive Electronics Council (AEC) AEC-Q100 qualified

Benefits

- > High sensitivity to detect sub-mm movements for human presence and vital sensing applications
- > High bandwidth for precise distance measurements with mm accuracy
- > Small size for integration into space-constrained environments
- > Low power consumption for battery-driven applications

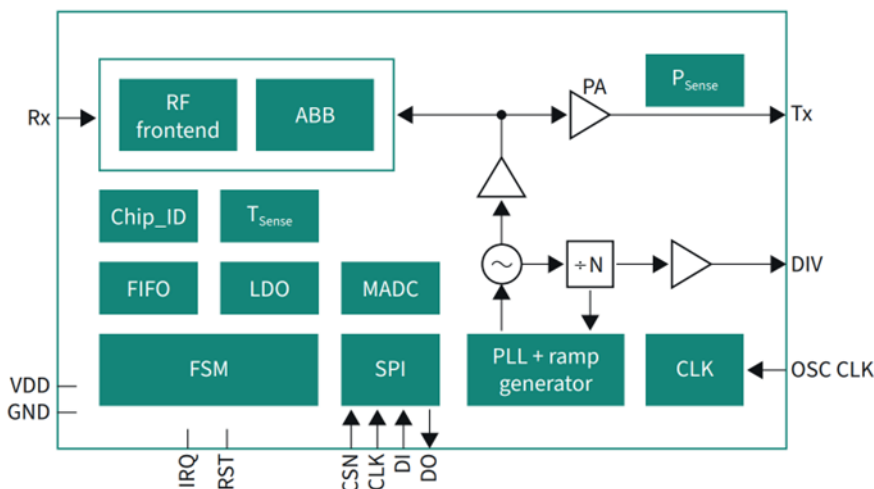
Target applications

- > Smart building devices such as door locks, smart doorbells and air conditioners
- > Smart home devices such as smart speakers and thermostats
- > TVs and notebooks
- > Smart appliances such as refrigerators and kitchen machines
- > Security devices such as motion detectors and IP cameras

Competitive advantage

- > Smallest 60 GHz radar sensor with antennas in package on the market
- > Fast ramp speed of 400 MHz/μs for high velocity resolution
- > Manufactured in Infineon's B11 SiGe BiCMOS technology for best RF performance
- > Integrated deep sleep mode for ultra-low power operations

Block diagram



Product collaterals / Online support

[Product page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
BGT60UTR11AIPXUMA1	SP005407929	PG-VF2BGA-28

XENSIV™ - TLE4973 automotive current sensors in TDSO package

TLE4973 is an accurate current sensor family for automotive use, particularly in electric vehicles. The sensors work at 5 V with an analog output as well as over current detection output. One digital control and diagnostic interface provides temperature readout, safety status readout, read / write programming access to internal EEPROM. The measurement range of up to +/-34 mT allows to sense currents up to 2 kA without the negative effects, e.g. hysteresis and saturation.



Features

- > Highly accurate coreless magnetic current sensor
- > 5 V supply voltage
- > Digital control and diagnostic interface
- > Very fast overcurrent detection (typ. response time 0.7 μ s)
- > Programmable sensitivity and overcurrent threshold
- > ISO 26262-compliant development for safety requirements up to ASIL B

Benefits

- > No hysteresis, no saturation
- > Protection against over currents
- > Very low power dissipation
- > Single wire interface for programming sensitivity and over-current thresholds and executing diagnosis from μ C
- > Reliable current measurement over lifetime without recalibration

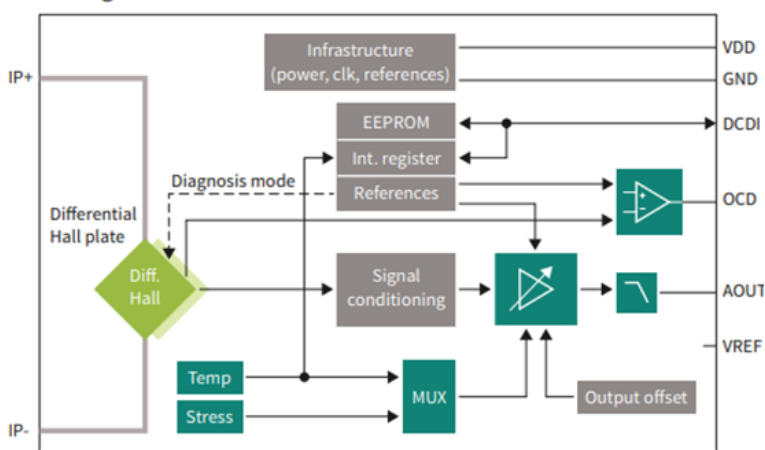
Target applications

- > Traction inverter (high voltage and 48 V)
- > Auxiliary drives
- > Battery main switch
- > PV inverters
- > Overload and over current monitoring

Competitive advantage

- > Very low sensitivity error over temperature and lifetime
- > Separate path for very fast overcurrent detection (typ. response time < 0.7 μ s)
- > Programmable sensitivity to optimize sensing performance

Block diagram



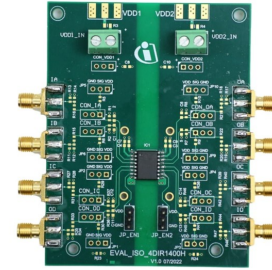
Product collaterals / Online support

[Product family page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
TLE4973AE35D5S0001XUMA1	SP005353128	PG-TDSO-16-30
TLE4973RE35D5S0001XUMA1	SP005448166	PG-TDSO-16-30
TLE4973RE35D5S0010XUMA1	SP005448161	PG-TDSO-16-30

EVAL_ISO_4DIR1400H - evaluation board for ISOFACE™ quad-channel digital isolators



This design was developed to evaluate the performance of Infineon's ISOFACE™ quad-channel digital isolators. It features the 4DIR1400H with 3 forward and 1 reverse channels and a low default output.

Features

- > High common mode transient immunity
- > Wide supply voltage range up to 6.5 VDC
- > High signaling rate
- > Default fail-safe output state
- > Component and system-level certification

Benefits

- > Fast switching power switch - high dv/dt
- > Enabling high power density designs
- > Enabling high noise immunity
- > Enabling easy alternative sourcing
- > Reliable default output state
- > Small, easy configuration for evaluation

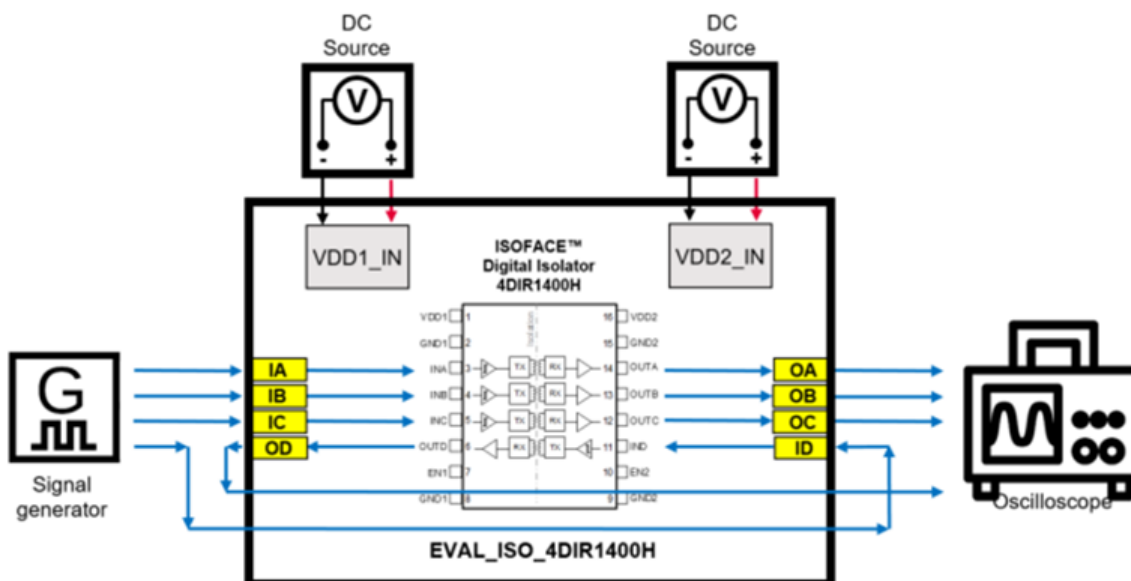
Target applications

- > Industrial automation
- > Server
- > Telecom
- > Industrial SMPS
- > Solar
- > Isolated serial peripheral interface
- > Hybrid, electric and powertrain systems: battery management system, on-board charger, traction inverter, DC / DC converter, inverter and motor control

Product collaterals / Online support

[Board page](#)

Block diagram

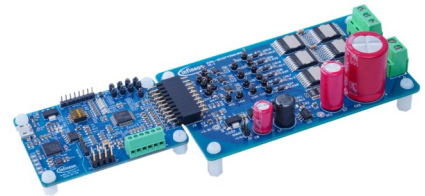


Product overview incl. user manual link

OPN	SP Number
EVALISO4DIR1400HTOBO1	SP005923709

EVAL-2ED2742S01GM1

EVAL-2ED2742S01GM1 for Battery Powered Applications (BPA) is an evaluation kit consisting of a three-phase inverter power board with the 160 V rated 2ED2742S01Q (3 x 3 10-VSON 10) half bridge gate driver driving six 150 V rated OptiMOS™ MOSFETs BSC074N15NS5 (5 x 6 Super SO8). The power board has a M1 connector that is used to interface with iMotion™ Modular Application Design Kit (MADK) control card – EVAL-M1-101T.



Features

- > Bootstrap voltage (VB) of +160 V
- > Floating designed for bootstrap
- > Integrated bootstrap diodes
- > UVLO for both high and low side
- > Short Pulse/ noise input filter
- > Schmitt trigger inputs
- > 3.3 V, 5 V input logic compatible

Benefits

- > Easy replacement of IGBTs
- > Evaluation of Infineon EiceDRIVER™ gate driver
- > Direct access to IGBT for measurements
- > Easy exchange of resonant coil

Target applications

- > Induction
- > Microwave
- > Rice cooker

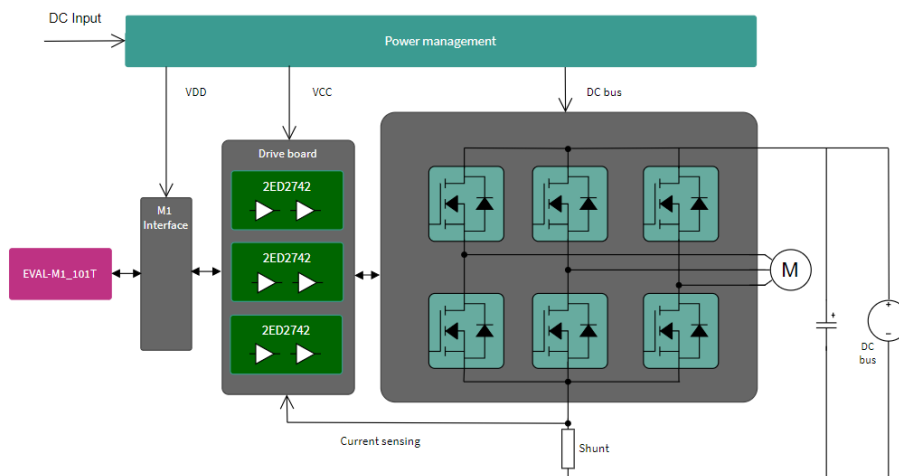
Competitive advantage

- > High power density
- > Smaller footprints
- > High durability and reliability
- > Excellent thermal management
- > Scalability
- > Simplicity (easy to use)

Product collaterals / Online support

[Board page](#)

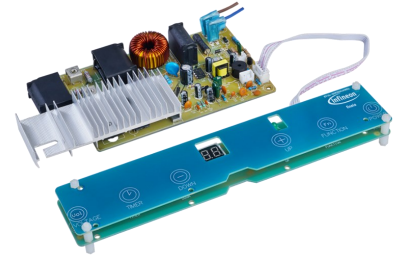
Block diagram



Product overview incl. user manual link

OPN	SP Number
EVAL2ED2742S01GM1TOBO1	SP005983255

EVAL-IHW25N140R5L: evaluation board for induction heating with new reverse conducting R5L IGBT



The single-ended induction heating evaluation board EVAL-IHW25N140R5L features the new 1400 V reverse conducting R5L IGBTs, specifically designed for resonant switching applications with maximum output power up to 2kW.

This evaluation board demonstrates the functionality and features of the 1400 V reverse conducting R5L IGBTs technology in combination with the Infineon EiceDRIVER™ 25 V single-channel low-side non-inverting gate driver.

Features

- > Single-ended typology
- > 2 kW maximum output power
- > Power control over 9 levels
- > 99 min integrated timer functionality
- > 170 mm coil (replaceable)

Target applications

- > Induction
- > Microwave
- > Rice cooker

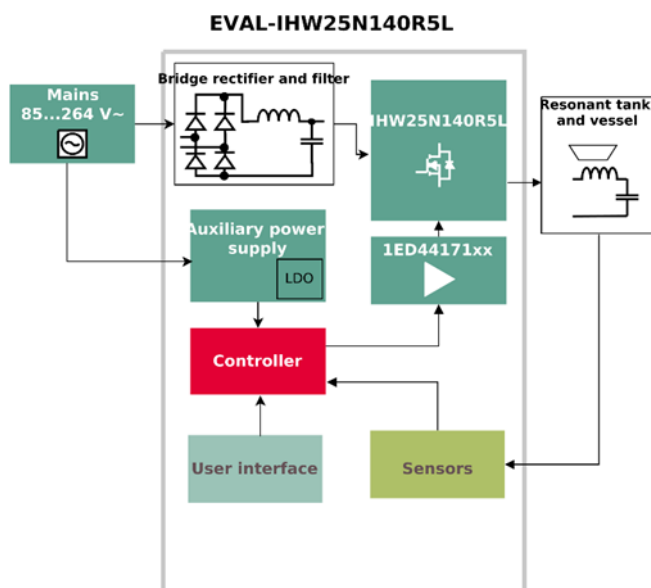
Benefits

- > Easy replacement of IGBTs
- > Evaluation of Infineon EiceDRIVER™ gate driver
- > Direct access to IGBT for measurements
- > Easy exchange of resonant coil

Competitive advantage

- > - 11% saturation voltage reduces conduction losses
- > - 34% diode forward voltage lowers stress with less resistive cookware
- > - 3% device temperature results in less cooling effort
- > Tighter parameters distribution for easy parallel operation

Block diagram



Product collaterals / Online support

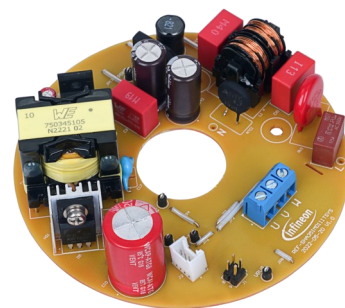
[Board page](#)

Product overview incl. user manual link

OPN	SP Number
EVALIHW25N140R5LTOBO1	SP005962499

REF-SHA35IMD111TSYS

The REF-SHA35IMD111TSYS is a turnkey solution for low-voltage BLDC ceiling fans, focusing on high efficiency and a ready-to-use solution for motor and PFC control. It uses the iMOTION™ IMD111T-6F040 driver with field-proven Motion Control Engine (MCE) which eliminates software coding from the motor control algorithm development process. Assisted by the powerful iMOTION™ Solution Designer (iSD) it is possible to have the motor up and running in less than an hour.



Features

- > Wide AC input range of 90~300 V_{rms}
- > High PF value > 0.95, THD < 10% at max load
- > High efficiency of > 0.85 at maximum load
- > Standby power <1 W
- > 4kV L-N surge meets IEC61000-4-5
- > iMOTION™ Motion Control Engine (MCE)
- > Infrared remote control with last-speed-saving
- > Full protection: brown-in/out, overvoltage, overcurrent
- > Single-layer PCB for compact, low-cost design
- > RoHS compliance

Target applications

- > Ceiling fan – motor control and drive solutions;
- > Home appliances,
- > Motor control and drives

Benefits

- > Cost-effective single layer design with a ready-to-copy PCB
- > No motor control algorithm development required
- > Tested according to the regulations which apply for the Indian Market

Competitive advantage

- > Form-factor of PCB supports retro-fit and speeds up evaluation process
- > Turnkey motor control with the field-proven MCE (Motor Control Engine) eliminates the need for motor control software development and reduces TTM
- > Included infrared control (IrDa sensor board and remote control) simplifies getting started and testing

Product collaterals / Online support

[Board page](#)

Product overview incl. user manual link

OPN	SP Number
REFSHA35IMD111TSYSTOBO1	SP005874184