



New Products Introduction

January 2018

IM69D

XENSUV™ MEMS microphones

1EDI2010AS

EiceDRIVER™ SENSE - Isolated single channel IGBT driver for high voltage automotive applications

OPTIGA™ Trust X

The perfect choice for IoT security

BGSX22G2A10

High Power Antenna Cross Switch (DPDT)

EconoDUAL™ 3 with integrated Shunts

IFF450B12ME4P_B11, IFF600B12ME4P_B11

BSZ0910ND

OptiMOS™ half-bridge

OptiMOS™ 5 175°C in SuperSO8

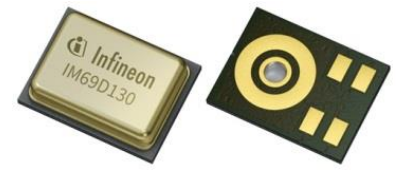
Enhanced temperature rating for improved robustness

EconoDUAL™ 3 with Common Emitter

FF450R12ME4E_B11, FF600R12ME4E_B11

IM69D

XENSUV™ MEMS microphones



XENSUV™ MEMS microphone IM69D130 is designed for applications where low self-noise (high SNR), wide dynamic range, low distortion and a high acoustic overload point are required.

IM69D130 is a high performance digital MEMS microphone making use of Infineon's Dual Backplate MEMS technology to deliver 105dB dynamic range and high output linearity up to 130dB SPL. The application benefits are crystal clear audio signals, extended pick-up distance and sensitivity to both soft and loud signals - from whispered speech to rock concerts.

Features

- > 69 dB(A) signal-to-noise ratio
- > Below 1 percent distortion up to 128 dB SPL
- > 130 dB SPL acoustic overload point
- > Digital (PDM) interface
- > Tight sensitivity and phase tolerances
- > 4x3x1.2mm package size

Target applications

- > Voice User Interface (VUI)
- > Active Noise Cancellation (ANC)
- > High quality audio capturing
- > Audio pattern detection

Competitive advantage

- > Infineon's new XENSIV™ Silicon microphones IM69D130 and IM69D120 has best in class signal to noise ratio and ultra-low distortion, best in class far field and audio capturing performance

Completing products (application specific)

- > ANC: Class D Audio Amplifier, ESD Surge protection
- > DC/DC converter: Linear voltage regulator

Benefits

- > Far field and low volume audio pick-up
- > Clear audio signal even at high sound pressure levels
- > Excellent precision of audio beams and algorithms

Application examples

- > VUI: Smart Speaker home automation, IoT devices
- > Active Noise Cancellation (ANC): headphones and earphones
- > High quality audio capturing: cameras, camcorders, conference systems
- > Audio pattern detection: industrial and home monitoring

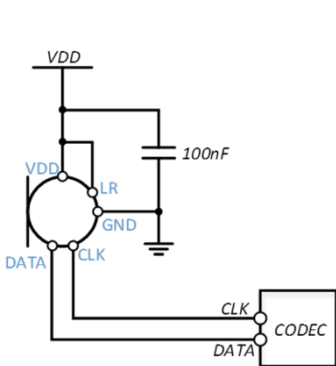
Product collaterals / online support

- > Product family [page](#)
- > IM69d120 product [page](#)
- > IM69d130 product [page](#)
- > Infineon microphone in noise-cancelling headsets [app note](#)

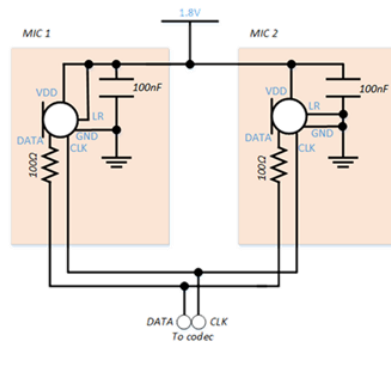
NEW Value propositions

- > Crystal clear audio signal from whispered voice up to rock concerts
- > Far field (+6dB SNR doubles the distance)
- > Ultra-high signal quality enables next level of advanced audio and voice algorithms
- > Easy to use digital PDM interface for multi microphone applications

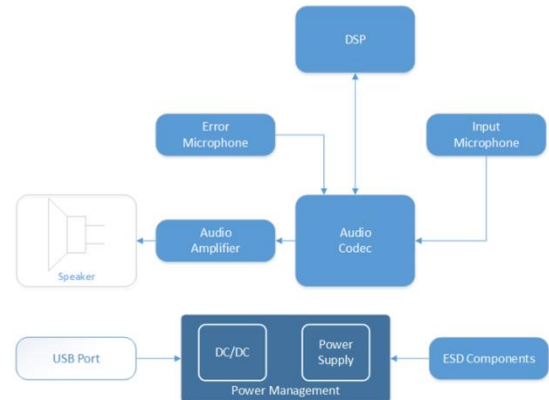
Block diagram / topology



Typical application circuitry



Block diagram



Product overview

OPN	SP Number	Package
IM69D120V01XTSA1	SP001777368	PG-LLGA-5
IM69D130V01XTSA1	SP001676962	PG-LLGA-5

1EDI2010AS

EiceDRIVER™ SENSE - Isolated single channel IGBT driver for high voltage automotive applications



The 1EDI2010AS is a high-voltage IGBT gate driver designed for motor drives above 5 kW. The 1EDI2010AS is based on Infineon's Coreless Transformer (CLT) technology, providing galvanic insulation between low voltage and high voltage domains. The device has been designed to support IGBT technologies up to 1200 V.

Features

- > 8-bit integrated ADC with programmable offset, on-chip galvanic isolation, support of IGBT up to 1200V, support of logic levels, 16-bit standard SPI interface, compatible to EiceBoost family

Benefits

- > Embedded ADC reduces system cost significantly, PCB area saving via combined use with EiceDRIVER™ BOOST, increased system efficiency, full temperature and voltage measurements

Target applications

- > Electric vehicle
- > DC-DC
- > Motor drives
- > CAV

NEW Value propositions

- > Saves up to 1.5€/channel
- > Easy product communication, continuous monitoring
- > Improved efficiency
- > Reduced stress on switches
- > Easy to design products

Competitive advantage

- > Integrated ADC reduces number of parts in the BOM, simplifies layout, increase integration level, rendering a possible system cost reductions up to 1,5€/channel

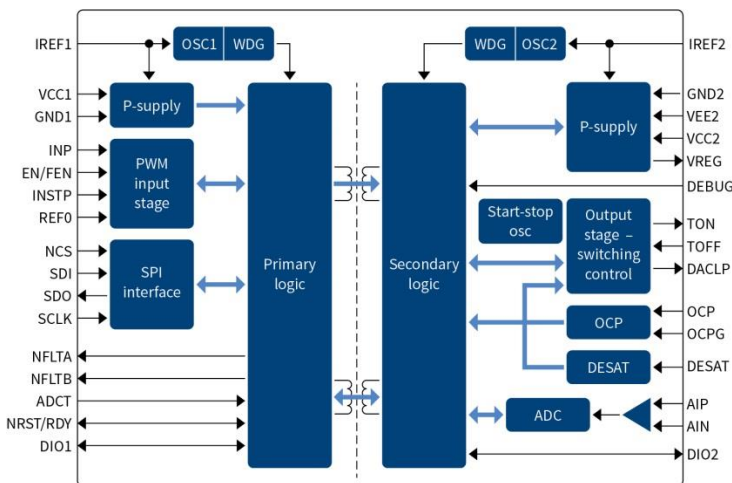
Product collaterals / online support

- > Evalboard including [software & GUI](#)
- > Product [page](#)

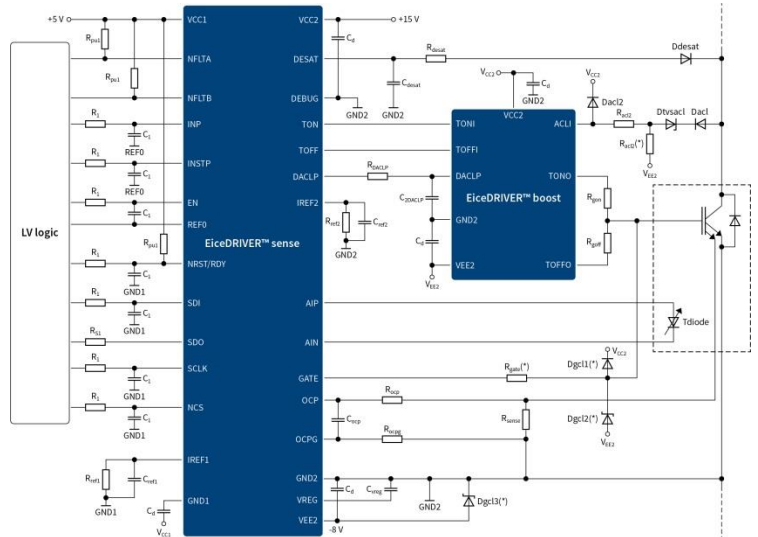
Completing products

- > EiceBOOST: 1EBN1001AE

1EDI2010AS circuit diagram



Application block diagram

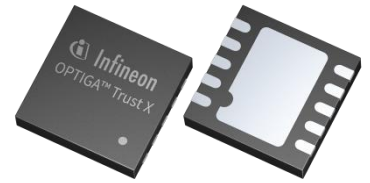


Product overview incl. datasheet link

OPN	SP Number	Package
1EDI2010ASXUMA1	SP001299836	PG-DSO-36

OPTIGA™ Trust X

The perfect choice for IoT security



With the rising number of new business and applications using cloud services and artificial intelligence, IoT connected devices have become the enablers of a new era of innovations adding a significant value to the global economy. This new business potential goes nevertheless hand in hand with new security threats: intellectual property theft, personal information may get stolen, interruption of operations compromising the business continuity, and even endangering a company's brand image and thus its existence.

The OPTIGA™ Trust X is Infineon's response to those threats. It is a hardware based security solution optimized to address IoT device's requirements: premium security, high performance, easy to integrate, supporting non-rich operating systems, low power consumption, and small packages. The product covers a broad range of use cases: authentication, secure communication, data store protection, key provisioning, life-cycle management, power management, secure updates, and also platform integrity protection.

Features

- > High-end security controller
- > Turnkey solution
- > One-way authentication using ECDSA
- > Mutual authentication using DTLS client (IETF standard RFC 6347)
- > Secure communication using DTLS
- > Compliant with the USB Type-C™ Authentication standard
- > I2C interface
- > Up to 10 KB user memory
- > Cryptographic support: ECC256, AES128, SHA-256, TRNG, DRNG
- > PG-USON-10-2 package (3 x 3 mm)
- > Standard & extended temperature ranges
- > Full system integration support
- > Common Criteria Certified EAL6+ (high) hardware
- > Cryptographic Tool Box based on ECC NIST P256, P384 and SHA256 (sign, verify, key generation, ECDH, session key derivation)

Application examples

- > Smart IoT

Benefits

- > Enhanced security for connected devices
- > Easy integration
- > Cost-effective deployment
- > Enabling new features and business models

Target applications

- > Industrial control and automation
- > Consumer electronics
- > Smart home
- > Medical devices

Product collaterals / online support

- > Product [page](#) (live from 9th of Jan)
- > Product [brief](#)
- > OPTIGA Trust X [datasheet](#)

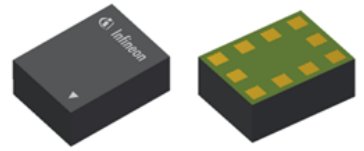
Product overview

OPN	SP Number	Package
SLS32AIA020X2USON10XTMA2	SP001707620	PG-USON-10
SLS32AIA020X4USON10XTMA2	SP001777672	PG-USON-10
OPTIGATRUSTXEVALKITTOBO2	SP001722572	N/A

BGSX22G2A10

High power antenna cross switch (DPDT)

The BGSX22G2A10 RF MOS switch is specifically designed for LTE and WCDMA triple antenna applications. This DPDT offers low insertion loss and low harmonic generation paired with high isolation between RF ports. The switch is controlled via a GPIO interface. The on-chip controller allows power-supply voltages from 2.3V to 3.4V. The switch features direct-connect-to-battery functionality and DC-free RF ports. Unlike GaAs technology, external DC blocking capacitors at the RF Ports are only required if DC voltage is applied externally. The BGSX22G2A10 RF Switch is manufactured in Infineon's patented MOS technology, offering the performance of GaAs with the economy and integration of conventional CMOS including the inherent higher ESD robustness. The device has a very small size of only 1.15 x 1.55mm² and a maximum thickness of 0.6mm.



Features

- > RF CMOS DPDT antenna cross switch with power handling capability of up to 36.5 dBm
- > Ultra-low insertion loss and harmonics generation
- > 0.1 to 6.0 GHz coverage
- > High port-to-port-isolation
- > No decoupling capacitors required if no DC applied on RF lines
- > General Purpose Input-Output (GPIO) Interface
- > Small form factor 1.15mm x 1.55mm
- > No power supply blocking required
- > High EMI robustness
- > RoHS and WEEE compliant package

Benefits

- > Small footprint, easy for integrations
- > PCB and costs savings
- > Allows the alternation of Antennas, RF paths
- > Decrease correlations between antennas
- > Operates up to 6GHz frequency range (5G)

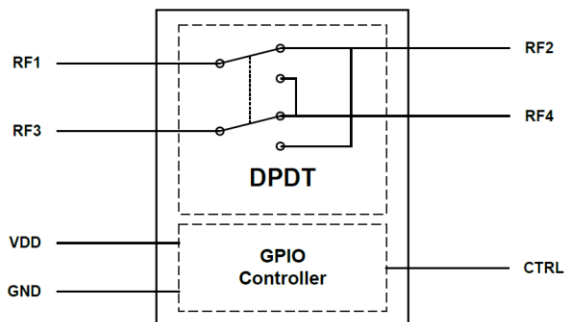
Target applications

- > UL-CA support
- > MIMO
- > 2G/3G/4G
- > antenna selections

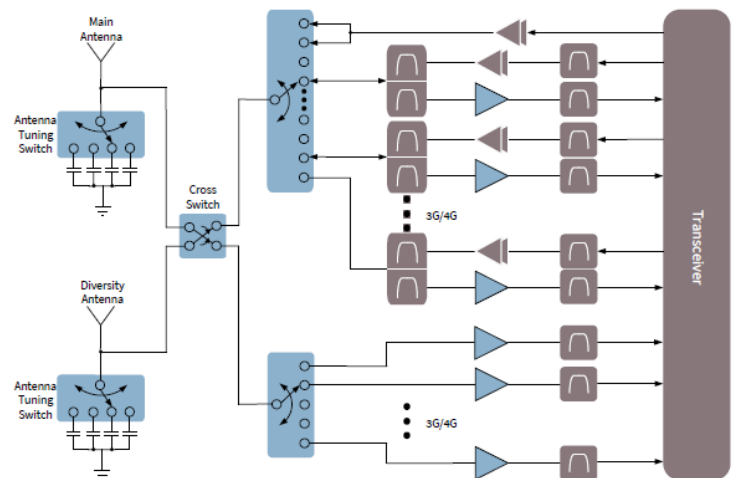
NEW Value propositions

- > Enable compact design and form factors
- > Design flexibility
- > Excellent wireless performance
- > Higher data rate

Block diagram



Application Block Diagram for RF Front End in a mobile phone



Product collaterals / online support

- > Product family [page](#)
- > BGSX22G2A10 [page](#)

Product overview

OPN	SP Number	Package
BGSX22G2A10E6327XTSA1	SP001646670	PG-ATSLP-10

EconoDUAL™ 3 with integrated Shunts

IFF450B12ME4P_B11, IFF600B12ME4P_B11



Typical Appearance

Infineon's EconoDUAL™ 3 modules are now available with integrated shunt resistors for current monitoring in the AC path. The integration of additional functionality into the IGBT module is a very effective way to optimize the overall system costs of an inverter. External current sensors are no longer needed. This saves space in the system, reduces material costs and lowers manufacturing efforts.

In addition to the reduction in system costs, high current measurement accuracy across a wide temperature range is achieved. This leads to a precise motor control. The EconoDUAL™ 3 with integrated shunts can be used in a wide variety of applications, such as AC motor drives, switching power supplies and solar. For an easy design in, a reference design is available.

With the new EconoDUAL™ 3 shunt module family, Infineon supports current ranges from 300A to 600A at 1200V, with 1700V to follow soon. The modules are available with pre-applied thermal interface material for lowest thermal resistance and longest lifetime. The PressFIT housing enables for a fast and cost efficient assembly.

Features

- > 1200V state of the art IGBT4 technology
- > ED3 with integrated shunts for current measurement
- > 1200V: 300A, 450A and 600A Modules
- > PressFIT control pins and screw power terminals
- > TIM – pre-applied thermal interface material to achieve longest lifetime
- > Compact and robust design with molded terminals
- > T_{vjop} 150°C
- > LOW $V_{(CEsat)}$
- > $V_{(CEsat)}$ with positive Temperature Coefficient
- > Isolated Base Plate

Benefits

- > Reliable EconoDual™ 3 package with long-term stable TIM and integrated shunt
- > Higher Inverter Power Density
- > Increased current measurement accuracy
- > Reduced system costs
- > PressFIT reduces mounting effort and increases the interconnection reliability

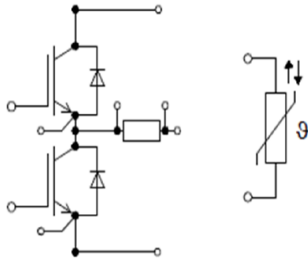
Target applications

- > GPD
- > Servo Drives
- > CAV/E-Bus
- > UPS
- > Solar

NEW Value propositions

- > Highest efficiency and power density
- > Reduced system costs
- > High system reliability
- > Easy design in

Block diagram



Product collaterals / online support

- > Product family [page](#)
- > IFF450B12ME4P_B11 [page](#)
- > IFF600B12ME4P_B11 [page](#)

Product overview incl. datasheet links

OPN	SP Number	Package
IFF450B12ME4PB11BPSA1	SP001377612	AG-ECONOD-6
IFF600B12ME4PB11BPSA1	SP001377694	AG-ECONOD-6

BSZ0910ND

OptiMOS™ half-bridge



The leading OptiMOS™ technology combined with the PQFN 3.0 x 3.0 mm² package offers an optimized solution for DC-DC applications with space critical requirements.

The BSZ0910ND fits perfectly in wireless charging and drives (e.g. multicopter) architectures where designers target to simplify the layout and significantly save space without compromising on efficiency.

Features

- > Symmetric half-bridge with very-low $R_{DS(on)}$ in a small 3.0 x 3.0 mm² package outline
- > Exposed pads
- > Logic level (4.5 V rated)
- > RoHS compliant 6/6 (full lead free)

Benefits

- > Low switching losses
- > High switching frequency operation
- > Lowest parasitics
- > Low operating temperature
- > Low gate drive losses
- > RoHS 6/6 lead free product

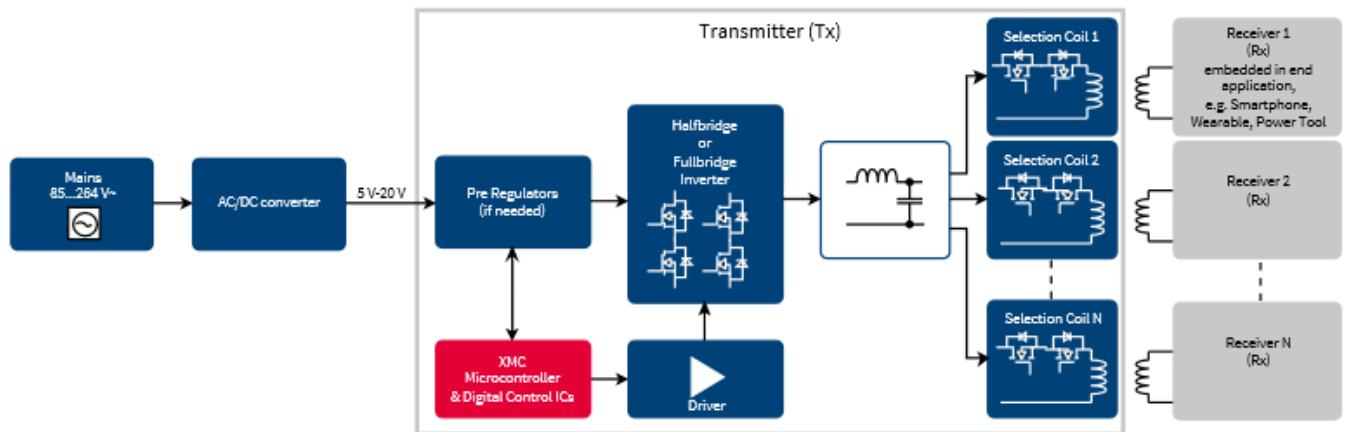
Target applications

- > Wireless power
- > Drives (e.g. multicopter)

Product collaterals / online support

- > Product family [page](#) (product will go live Q1 2018)
- > Wireless charging [video](#)
- > Wireless charging [webinar](#)

Block diagram



Product overview incl. datasheet link

OPN	SP Number	Package
BSZ0910NDXTMA1	SP001699886	PG-WISON- 8-1

OptiMOS™ 5 175°C in SuperSO8

Enhanced temperature rating for improved robustness



OptiMOS™ 5 175°C in SuperSO8 is the new package family that achieves higher performance as well as longer life time compared to 150°C SuperSO8.

Features

- > Low $R_{DS(on)}$
- > Optimized for synchronous rectification
- > Enhanced 175°C capability in SuperSO8

Target applications

- > Telecom
- > Motor drives
- > Server

Competitive advantage

- > Best-in-class silicon combined with best-in-class package

Benefits

- > Longer life time
- > Highest efficiency and power density
- > Highest system reliability
- > Thermal robustness

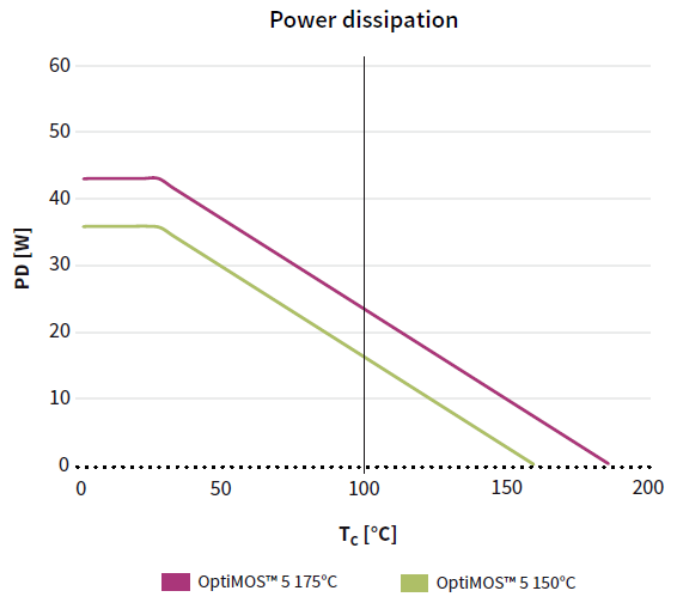
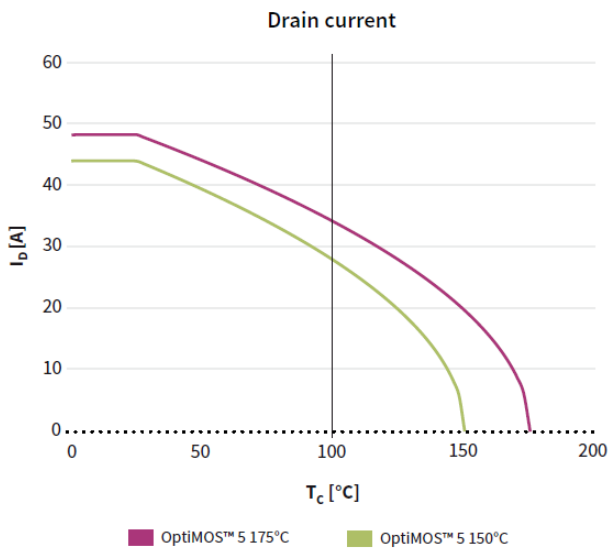
NEW Value propositions

- > Highest efficiency and power density
- > Reduced system costs
- > High system reliability
- > Easy design in

Product collaterals / online support

- > Product family [page](#) (page will go live Q1 18)
- > OptiMOS™ 5 175°C in SuperSO8 [product brief](#)

Compared to the standard SuperSO8, OptiMOS™ 5 175°C shows up to 30 percent increase either in drain current or in power dissipation
The first wave of products offering this enhanced temperature rating is available in OptiMOS™ 5 in 30 V, 40 V and 60 V



Product overview incl. datasheet links

OPN	SP Number	Package
BSC011N03LSTATMA1	SP001657064	TDSON
BSC010N04LSTATMA1	SP001657068	TDSON
BSC014N04LSTATMA1	SP001657070	TDSON
BSC014N06NSTATMA1	SP001657072	TDSON
BSC016N06NSTATMA1	SP001657074	TDSON
BSC019N06NSATMA1	SP001407774	TDSON
BSC028N06NSTATMA1	SP001666498	TDSON
BSC097N06NSTATMA1	SP001666496	TDSON

EconoDUAL™ 3 with Common Emitter

FF450R12ME4E_B11, FF600R12ME4E_B11



Typical Appearance

Infineon now offers dedicated EconoDUAL™ 3 modules for 3-level NPC2 topologies. In combination with a standard half-bridge EconoDUAL™ 3 1700V or 1200V, the new IGBT module with Common Emitter configuration is perfectly suited for 1500V and 1000V solar inverters.

Today's PV central inverter market shows a clear trend towards 1500V systems. The EconoDUAL™ 3 is already widely used in 1000V systems for solar applications. With the new solution, central inverter manufacturers can continue to rely on the established EconoDUAL™ 3 housing also for their future designs. Two new EconoDUAL™ 3 modules with Common Emitter configuration are available – FF450R12ME4E_B11 and FF600R12ME4E_B11. Both are equipped with the proven PressFIT housing, enabling for fast and cost efficient assembly in the production line.

Features

- > EconoDUAL™ 3 with Common Emitter topology
- > Low V_{CEsat}
- > $T_{vj op} = 150^{\circ}C$
- > $V_{ISO} = 3.4kVrms$ 1 min ($\pm 4.8kV$ DC 1 min)
- > Standard Housing
- > PressFIT control pins and screw power terminals
- > Compact and robust design with molded terminals

Benefits

- > 3-level NPC2 configuration based on established EconoDUAL™ 3 housing
- > In line with UL requirements for 1500V solar inverters
- > Compact modules
- > Easy and most reliable assembly
- > No plugs and cables required

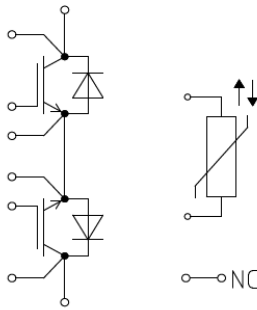
Target applications

- > Solar
- > UPS

Product collaterals / online support

- > FF450R12ME4E_B11 [page](#)
- > FF600R12ME4E_B11 [page](#)

Block diagram



Product overview incl. datasheet links

OPN	SP Number	Package
FF450R12ME4EB11BPSA1	SP001671620	AG-ECONOD-6
FF600R12ME4EB11BOSA1	SP001671626	AG-ECONOD-5