New Product Introduction

July 2023

62mm with TRENCHSTOP™ IGBT7

The new module configuration combines 1200 V IGBT7 chip technology with a screw terminal and baseplate housing into highly robust package to support parallel connection and for 3 - level configuration

These 62 mm modules are the perfect choice for various industrial applications with power ratings > 100 kW and up to the MW range in parallel operation.

Features

> Highest power density in standard 62mm package

> T_{jop} = 150° C (continuous) and 175° C (20% overload)

> Unchanged standard package with full mechanical compatibility to last module version and symmetrical internal design

> Available in 'Common Emitter' configuration among others for 3 - level NPC2 topologies

Competitive advantage

> Combination of "standard half bridge" and "common emitter" module for 3 - level application perfectly fits into the system requirements of UPS and Solar Central (utility scale)

> Scalability: easy paralleling of 62 mm modules

> Robustness: screw main terminals and high creepage and clearance distances

> Commercial: attractive price - performance-ratio for system operator, high level of market acceptance

Benefits

> Existing packages with higher current capability, allows to increase inverter output power with same frame size

> Highest power density

> Avoidance of paralleling of IGBT modules

> Reduced system costs by simplification of the inverter systems

> Flexibility and ready for three-level configuration

> Highest reliability

Target applications

> Central inverter solutions

> General purpose motor drive - variating frequency and voltage

> Solid - state circuit breaker

> Uninterruptible Power Supplies (UPS)

Block diagram
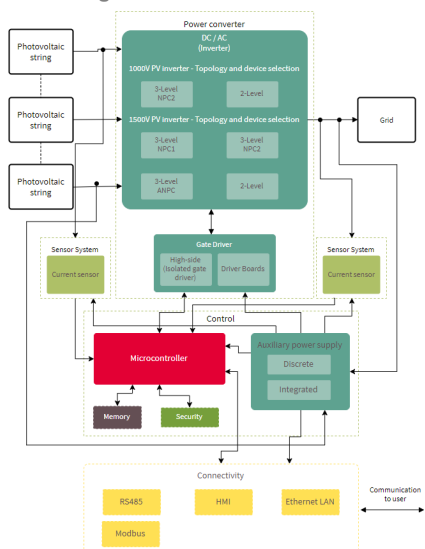
Product collaterals / Online support

Product family page

Product overview incl. data sheet link

OPN	SP Number	Package
FF450R12KE7HPSA1	SP005723766	AG-62MMHB-711
FF600R12KE7BPSA1	SP005538370	AG-62MMHB-711
FF600R12KE7EHPSA1	SP005568704	AG-62MMHB-711
FF800R12KE7HPSA1	SP005432766	AG-62MMHB-711
FF800R12KE7EHPSA1	SP005568685	AG-62MMHB-711

CoolSiC™ MOSFET discrete 650 V in TOLL package

The CoolSiC™ MOSFET discrete 650 V in TOLL (HSOF-8) package leverages the strengths of the Infineon CoolSiC™ technology. The small form factor and low parasitic of the TO-leadless (TOLL) package allow for an even more efficient and effective usage of PCB space as well to drive the MOSFET at higher frequencies, reaching higher power density. The reduction of thermal impedance compare to D²PAK package, together with the innovative .XT interconnect technology, makes the CoolSiC™ MOSFET 650 V in TOLL products suitable for high to mid power systems, optimizing the performance per $. It ideally fits the emerging Totem Pole PFC topology but also enables high efficiency and density in DC-DC and AC-DC stages as well as in inter-leaved topologies to address high efficiency targets. The products are further suitable for specific high efficiency designs in low power systems, like home appliances or low power industrial drives.

Features

> Industry standard package - JEDEC industrial applications qualified (J-STD20 and JESD22)

> Small form factor

> Thermal impedance reduction

> .XT interconnect

> Low parasitic inductance

> Kelvin Source connection

> MSL1 (or MLS2) compliant

> Thermal improvement over D²PAK and similar to TO-220

> Suitable for wave or reflow soldering

> Totally Pb free

> TOLL is already a high runner in CoolMOS™ and CoolGaN™

Product collaterals / Online support

Product family page

Benefits

> Enable high system power density and high switching operations

> Enable cheaper and faster SMD assembly

> Ease of use and compatibility with existing vendors

> Reduced switching losses à higher energy efficiency

> Lower case temperature and higher reliability

> Enables easy design - in with complementing Infineon products like CoolMOS™ and CoolGaN™

Target applications

> Central inverter solutions, solar inverters

> Datacenter power, Online UPS

> Telecom

> Industrial SMPS

> Energy storage systems

> Battery formation

> Motor drives

> Home appliances

Product overview incl. data sheet link

OPN	SP Number	Package
IMT65R022M1HXUMA1	SP005716811	PG-HSOF-8
IMT65R030M1HXUMA1	SP005716819	PG-HSOF-8
IMT65R039M1HXUMA1	SP005716838	PG-HSOF-8
IMT65R048M1HXUMA1	SP005716839	PG-HSOF-8
IMT65R057M1HXUMA1	SP005716844	PG-HSOF-8
IMT65R072M1HXUMA1	SP005716849	PG-HSOF-8
IMT65R083M1HXUMA1	SP005716851	PG-HSOF-8

OptiMOS^{TM} 6 power MOSFET 40 V in PQFN 2x2 mm² package

Infineon's new best - in - class OptiMOS^{TM} 6 40 V PQFN 2x2 mm² product is setting new performance standards for small form factor packages. Compared to the next best competitor, the on - state resistance ($R_{DS(on)}$) is improved by up to 40 %, while FOM Q_G is reduced by up to 50 %, offering outstanding switching performance for best - in - class solutions.
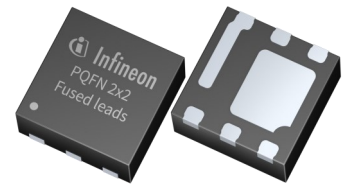
Features

> Optimized for high performance applications

> 150°C junction temperature (T_j)

> Industry's best FOMs in small PQFN 2x2 package

> Superior thermal resistance for a PQFN 2x2 package

> Leading edge silicon technology

> 100% avalanche tested

> Pb-free lead plating; RoHS compliant

> Halogen - free according to IEC61249-2-21

Benefits

> Smallest package for highest PCB layout routing flexibility

> Significant space saving

> Very low voltage overshoot

> Small switching losses

> Reduced conduction losses

> Facilitated thermal management

> Less paralleling required

Competitive advantage

> Best - in - class performance

> Thermal performance

> Switching performance and figure of merits

> Best - in - class $R_{DS(on)}$ (max) in smallest PQFN 2x2 package for maximum power density

> System cost reduction

> High continuous current capability up to 103 A

> Superior thermal resistance (R_{thJC}= 3.2 K/W)

> 150°C junction temperature (T_j)

Target applications

> Wireless charging

> Charger and adapters

> Robots and drones

> DCDC

> Industrial SMPS

> Server

> Telecom

> Consumer

Block diagram
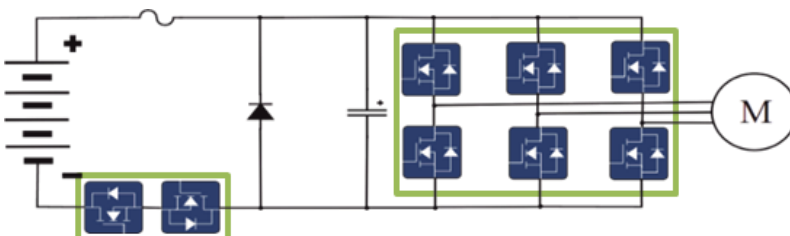
Product collaterals / Online support

Product page

Product family page

Product overview incl. data sheet link

OPN	SP Number	Package
ISK057N04LM6ATLA1	SP005562815	PG-VSON-6

BGA525N6 dual-band GPS LNA

The BGA525N6 is designed to enhance GNSS signal sensitivity for band L1 / L2 / L5 especially in wearables and mobile cellular IoT applications. With a high gain and ultra-low noise figure of the LNA, system sensitivity is significantly improved compared to conventional LNAs. Next to the standard mode, BGA525N6 offers a low-power mode and high-gain mode. Operating in low-power mode, the LNA consumes less than 2 mW preserving valuable battery power, which is ideal for small battery powered GNSS devices. Operating in high-gain mode, the LNA provides up to 21 dB gain and ensures best performance and fastest time-to-first-fix. The GPIO control interface provides a straightforward control over 4 different operating modes. The broadband design ensures the functionality of all GNSS signals within 1164 to 1615 MHz with the same matching. Simplified dual-band GNSS system designs with one RF-Path are enabled by BGA525N6.

Features

> Operation frequencies 1164 to 1615 MHz

> Multiple-operating modes for different application

> Current consumption down to 1.5 mA

> Wide supply voltage range 1.1 V to 3.3 V

> High insertion power gain up to 21 dB

> Low noise figure down to 0.7 dB

> 2 kV HBM ESD protection (including AI pin)

> Broadband design allows simultaneous operation of L1, L2, L5

Benefits

> Dual-band improves GPS accuracy into cm range (~30 cm)

> Improves GPS for indoor navigation

> 1.2 V support

Target applications

> Wearables

> IoT applications

> Mobile cellular TRx path (4G, 5G)

Competitive advantage
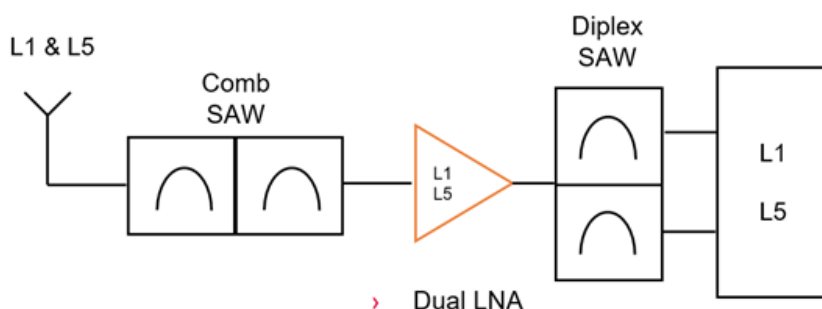
> Low power: up to 1.5 mA

> High gain: up to 19.0 dB

Product collaterals / Online support

Product page

Application guide

Block diagram

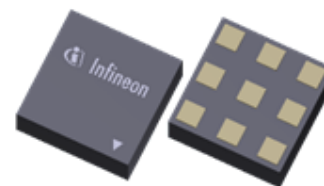## Product overview incl. data sheet link

OPN	SP Number	Package
BGA525N6E6327XTSA1	SP005724518	PG-TSNP-6

BGSA200ML9 - Ultra-small 2xSPST antenna tuning switch

The BGSA200ML9 is a versatile shunt-to-ground 2 x single-pole single-throw (2xSPST) antenna tuning switch. It is optimized for low R_{ON} and low C_{OFF} enabling applications up to 8.25 GHz.

Thanks to its 4 states USID1 and USID2 feature, it can be controlled either with GPIO lines or MIPI RFFE bus. Up to 3 instantiations of the same device can be controlled using the same RFFE bus when in MIPI RFFE mode.

Features

> Low R_{ON} x C_{OFF} FOM (1.4Ω, 155fF)

> RF voltage handling of 50 V in OFF state

> Ultra - small 1.1 mm x 1.1 mm package

> Support of MIPI and GPIO control modes

> In MIPI mode, 3 USID addresses

> Support both 1.2 V & 1.8 V V_{IO} operation

Benefits

> Supporting sub - 8.25 GHz applications

> Low R_{ON} x C_{OFF} FOM along with very high linearity

> Usable on platforms with 1.2 V supply voltage

> Space saving due to ultra - small package, suitable for space constrained applications

Competitive advantage

> Space saving due to ultra - small package

> Support of MIPI and GPIO control modes

> Usable on platforms with 1.2 V supply voltage

Product collaterals / Online support

Product page

Application guide

Target applications
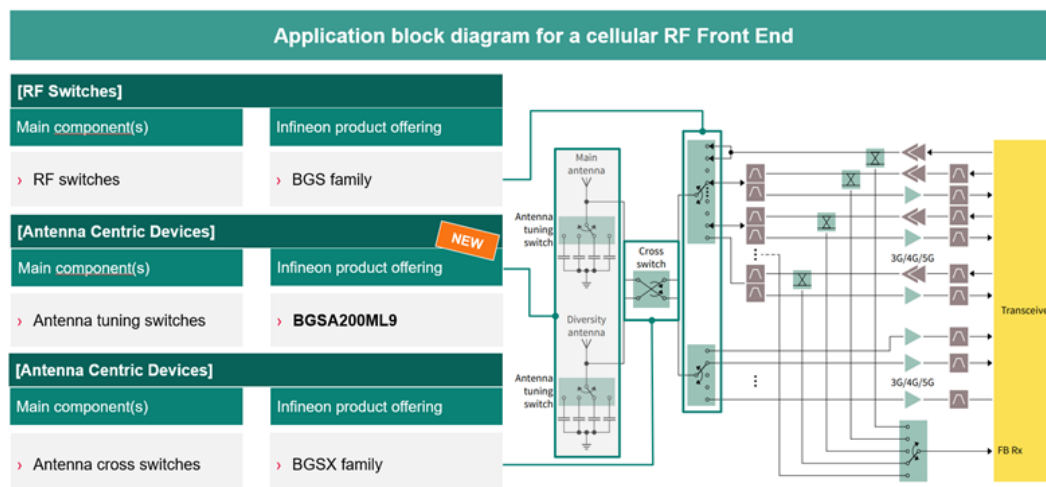
> Smartphone

> Note book / tablet

> Wearables (smartwatch, VR headset)

> Tracking applications

> Various cellular IoT

Block diagram

Product overview incl. data sheet link

OPN	SP Number	Package
BGSA200ML9E6327XTSA1	SP005728941	PG-TSLP-9

BGS14M8U9 - High power SP4T MIPI RF switch

The BGS14M8U9 is a single pole four throw (SP4T) high power switch in a compact 9-pin package (1.1 x 1.1 mm^2).
The device is optimized for 5G and other cellular applications up to 7.125 GHz. With a low insertion loss, high isolation, high linearity and high power handling, BGS14M8U9 is perfect for 5G and LTE 4G applications, such as 5G SRS, Uplink-Carrier Aggregation, and High Power User Equipment (HPUE Class 2).
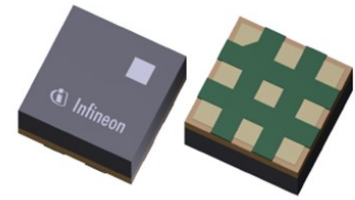
Features

> High power handling up to 39 dBm: optimal for cellular transmitting paths (TRx) and SRS

> MIPI 2.1 controlled

> Very compact footprint (1.1 x 1.1 mm^2) and industry compatible

> Wider frequency range 0.04 – 7.125 GHz

> Low IL @ 2.7 GHz: 0.34 dBm, high ISO @ 2.7 GHz: 35 dBm

> Super-fast switching speed typ 1.3 µs

Competitive advantage

> Dual supply support in single VIO (1.2 V / 1.8 V)

> High linearity up to 39 dBm power handling

> Best in class insertion loss performance in 5G NR bands (n77, n79, n46, n96)

Benefits

> Extended frequency operation for wider applicability: sub-7.125 GHz

> Less system losses for more flawless communication and higher power efficiency. Best-in-class insertion loss performance

> Compliant with next generation chipsets' requirements: dual VIO (1.2 V / 1.8 V) support

Target applications

> 4G and 5G cellular handsets and cellular modems

Product collaterals / Online support

Product page

Block diagram

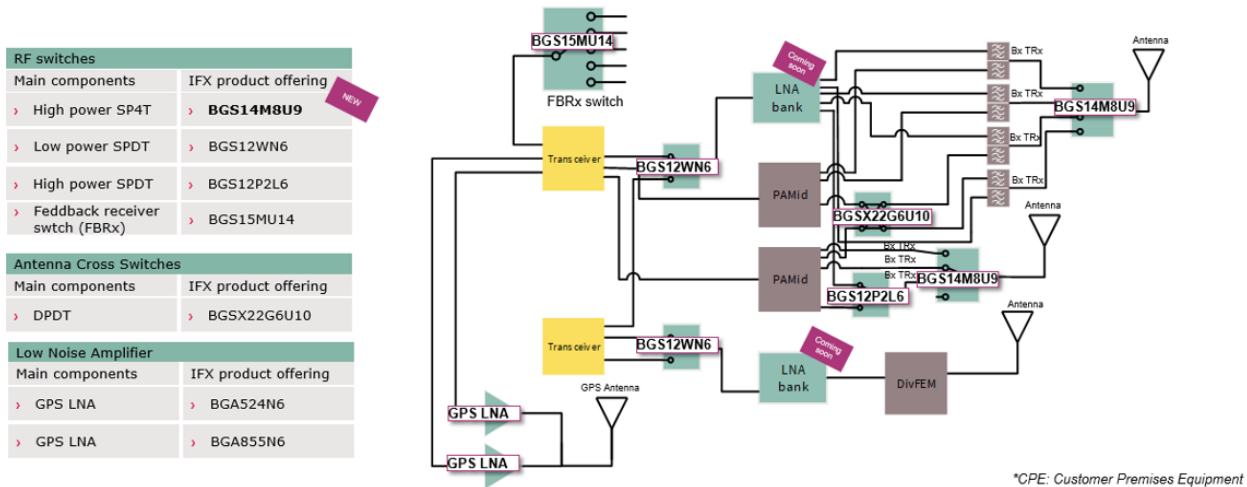## Product overview incl. data sheet link

OPN	SP Number	Package
BGS14M8U9E6327XUSA1	SP005582134	PG-ULGA-9

XENSIV™ - IM68A130A high performance analog MEMS microphone - best fit for automotive applications in particular Active Noise Cancellation (ANC)

As part of our comprehensive XENSIV™ sensor family, we offer high-performance digital and analog MEMS microphones qualified according to the state-of-the-art automotive quality standard AEC-Q103-003.
They are suited to all applications inside and outside the car, where the best audio performance in harsh automotive environments and an analog interface is required. These automotive microphones perfectly support acoustic noise cancellation applications with its flat frequency, stable phase response and very low LFRO (low frequency roll off <10 Hz.
They also enable distortion-free audio capture for all speech-related applications improving speech intelligibility for voice recognition algorithms.
Other highlights include close sensitivity and phase matching, making automotive XENSIV™ MEMS microphones ideal for beamforming arrays.

Features

> Qualification according to AEC-Q103-003

> Analog single - ended output

> Flat frequency response down to 10Hz for best ANC performance (LFRO: low frequency roll off)

> High dynamic range and high wind - noise robustness

> Signal to noise ratio of 68 dB(A)

> <1 % total harmonic distortions up to high SPL levels

> Acoustic overload point at 130 dBSPL

> Increased operating temperature range: TA = -40° C …105° C

Benefits

> Flat frequency response with very low frequency roll of for best ANC performance

> High SNR and AOP

> Extended availability to match long automotive design cycles

> Enlarged operating temperature range allows flexible use in different application environments

> Close sensitivity and phase matching for usage in arrays

Competitive advantage

> Qualification according to AEC-Q103-003

> Increased T-range: T_A = -40° C ... +105° C

> Long term availability

> High performance

> Very low LFRO < 10 Hz

Target applications

> Active Noise Cancellation / Road Noise Cancellation (ANC/RNC)

> Hands free calling

> Emergency call

> Voice control

> Siren detection

> Road condition detection

Block diagram
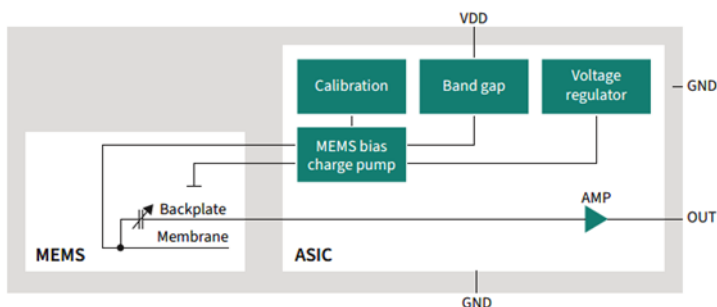
Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
IM68A130AXTMA1	SP005738297	PG-TLGA-4

XENSIV™ - IM70A135 MEMS microphone for consumer applications

IM70A135 is a compact high - performance microphone with a very high acoustic overload point of 135 dBSPL and a size of onl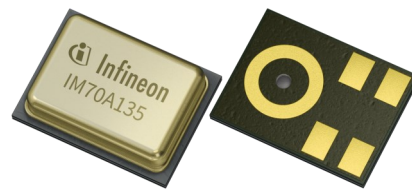y 3.50 x 2.65 x 1.00 mm3. This microphone is based on Infineon's new Sealed Dual Membrane MEMS technology which delivers high ingress protection (IP57) at a microphone level. The small size makes this microphone especially suited for TWS earbud applications.

Features

> Very high 70 dB(A) signal - to - noise ratio

> Ultra - low power modes for battery critical applications (170 / 70 µA)

> Sealed Dual Membrane (SDM) technology with IP57 ingress protection at microphone level

> Ultra - high acoustic overload point (AOP) of 135 dBSPL

> Very tight part - to - part phase and sensitivity matching (± 1 dB)

> Flat frequency response with a low LFRO (low frequency roll - off) of 37 Hz

Benefits

> Powerful far - field and low volume audio pick - up

> Crystal clear audio signals even in compact package size

> Enablement of advanced audio features (ANC, transparent hearing, audio zoom, beamforming)

Competitive advantage

> Sealed Dual Membrane (SDM) technology with IP57 ingress protection at microphone level

> Very high signal - to - noise ratio 70 dB(A) as well as ultra - high acoustic overload point 135 dBSPL

> High manufacturability and low group delay for multi mic applications

Target applications

> True wireless earbuds and active noise cancelling head-phones

> Smart speakers

> Home automation and IoT devices

> Cameras

> Conference systems

Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
IM70A135V01XTMA1	SP005596878	PG-TLGA-5

XENSIV™ - KP464 / KP466 family

Digital barometric air pressure sensors

Four different sensor ICs belongs to the KP46x family. Each variant has a specific pressure range to fulfill in the most optimum manner the customer applications. KP464 and KP464E are optimized for powertrain applications, KP466 is tailored for standard seat comfort applications whereas KP466P is specifically designed for advanced seat comfort & satellite battery monitoring applications. Each KP46x is individually calibrated and temperature compensated, reducing the software complexity by providing a direct readout of the pressure and the temperature.

Features

> Monitoring pressure & temperature

> High accuracy, high reliability

> Advanced diagnostic functions

> Lowest power consumption (supply current: 3.5 mA without SPI communication, in power down mode: 10 µA)

> High & flexible resolution

> Small package (4.5 x 5.1 x 1.75 mm³)

> High operating temperature range from -40° C to 125° C

> Backwards compatibility to previous pressure sensors

Competitive advantage

> Lowest power consumption

> High quality

> Superior logistics

Benefits

> Robust system & high quality solution

> Allows to reduce power budget to maximize system efficiency

> Robust sensor failure detection

> Best fitting configuration to the application needs

> Minimized design efforts by reusing existing software and PCB layout

> Optimized/lower fuel consumption

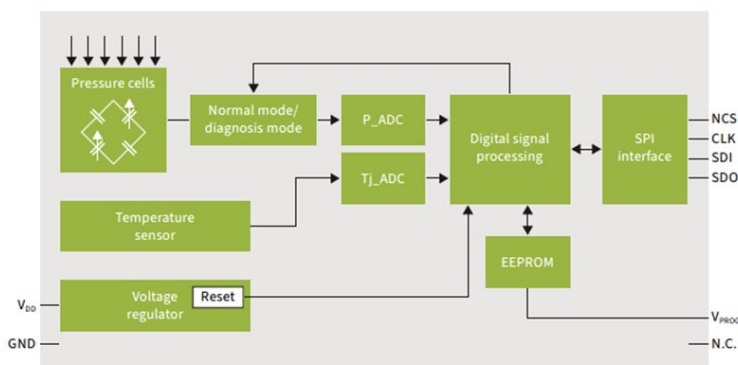> Lower emissions of CO_2 and other pollutants => achieving power target / no penalties

Target applications

> KP464

> Combustion control on Engine Control Unit (ECU)

> Combustion control on Mass Airflow Sensor (MAF)

> KP466

> Pneumatic seat systems

> Battery management system => thermal runaway detection

Block diagram

Product collaterals / Online support

Product page KP464

Product page KP464E

Product page KP466

### Product overview incl. data sheet link

OPN	SP Number	Package
KP464XTMA1	SP005430033	PG-DFN-8
KP464EXTMA1	SP005430839	PG-DFN-8
KP466XTMA1	SP005430044	PG-DFN-8
KP466PXTMA1	SP005866675	PG-DFN-8

EZ-PD™ PMG1-S3 CYPM1321-97BZXI

Infineon's EZ-PD™ PMG1-S3 CYPM1321-97BZXI is a dual port high-voltage microcontroller supporting dead battery operation. It is targeted for devices, docks, and accessory applications that are VBUS powered through the USB-C connector.

Its programmable ARM® Cortex®-M0+ is a 32-bit MCU that is optimized for low-power operation with extensive clock gating. The CPU sub-system also includes a 16-channel DMA/datawire block and a serial wire debug (SWD) interface, which is a two-wire form of JTAG. The debug configuration used for the microcontroller has four break-point (address) and two watchpoint (data) comparators.
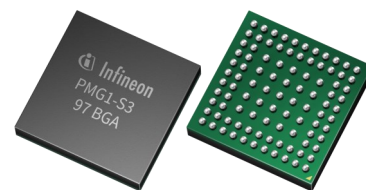
Features

> USB-C and USB PD support

> Dead battery Rd support

> 32-bit ARM® Cortex® M0+ MCU subsystem with 256 KB Flash, 32KB SRAM

> Integrated CAPSENSE™ controller

> 26 GPIOs and 26 I/O pins

> Legacy charging block for BC1.2 and Apple charge support

Benefits

> Optimized area and BOM thanks to the integrated single - chip solution

> Simple customization via ModusToolbox™ EZ-PD™ PMG1 SDK

> Easy integration in your application

> On - chip secure protection

Competitive advantage

> Single - chip solution optimizing BOM cost and board area

> Simple customization via ModusToolbox™ EZ-PD™ PMG1 SDK and flexibility of use

> On - chip secure protection

Target applications

> Smart speakers

> Smart home appliances

> VR / AR goggles

> Power tools

> Light electric vehicles

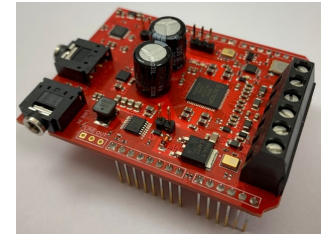## Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
CYPM132197BZXIXQMA1	SP005903988	PG-VFBGA-97
CYPM132197BZXITXUMA1	SP005903990	PG-VFBGA-97

Audio Application Kit for AURIX™

Audio Application Kit for AURIX™ is a combination of three set of boards, the AURIX™ TC375 lite kit, the KIT_A2G_AUDIO_SHIELD And the KIT_A2G_MIC_ARRAY. Due to the flexibility and the rich feature set of the AURIX™ Audio Application Kit in combination with the AURIX lite Kit, a lot of audio applications can be evaluated.

Features

> Stereo XENSIV™ IM67D120A digital MEMS microphones with PDM interface

> MERUS™ MA12070P Stereo Multilevel Class-D Audio Amplifier

> SGTL5000 audio - codec with line - input, headphone- and line-output

> CS2000CP Audio - PLL supporting various sample - rates and PTP audio - clock recovery (for e.g. AVB)

> Reverse polarity protection for power - input

> Reverse - supply of the AURIX™ lite Kit V2

> Onboard OPTIREG™ voltage - regulators

>> TLS205 V50 / V33

>> TLS202A1MBV

Target applications

> True wireless earbuds and active noise cancelling head-phones

> Generic I²S / TDM interfacing

> PDM microphone interfacing (software or hardware based PDM decimation)

> Audio DSP processing

> Sound generation

> IP - Audio streaming

> Realtime synchronized Audio over Ethernet (e.g. AVB, AES67)

> Microphone beamforming

> Audio playback / recording from / to external SD card using mikroBUS™ extension shield

> Voice recognition / hot-word detection

> Smart Speaker

> Siren detection

Benefits

> Interfacing I²S / left - justified / TDM buses in master - mode

> Interfacing of PDM microphones in Stereo configuration and PDM decimation in software

> Synchronous interfacing of multiple PDM microphones in array configurations with PDM decimation in hardware

> Exploring different audio - clocking options including network- clock recovery for AVB applications

> Multipurpose Audio - Streaming over Ethernet

> Performance evaluation of XENSIV™ IM67D120A microphones and MERUS™ MA12070P amplifier

> Interfacing of A²B networks as A²B master - node

Product collaterals / Online support

Board page KIT_A2G_AUDIO_SHIELD

Board page KIT_A2G_MIC_ARRAY

Board page KIT_A2G_TC375_LITE

Product overview incl. user manual link

OPN	SP Number
KITA2GAUDIOSHIELDTOBO1	SP005734293
KITA2GMICARRAYTOBO1	SP005734295
KITA2GTC375LITETOBO1	SP005551747

EVAL_BDPS_DD_TOLG – Eval board with TOLG power for bidirectional battery disconnection using IPTG014N10NM5 and BAS3010B

This kit evaluation board for bidirectional battery disconnection is using OptiMOS™ power MOSFET in a TOLG package IPTG014N10NM5 and BAS3010B. Bidirectional back-to-back MOSFET protection boards are used as static relays. Allowing safe and reliable bidirectional connection or disconnection of a circuit board. Typical functions of bidirectional disconnect boards are: hot swap and in-rush turn on current control, reverse polarity protection, eFuse and short circuit protection, turn on and off of a power source. The modular Back-to-Back board can be placed on the high or low side of the power bus. Additionally, the board is stackable, allowing for high parallelization count of TOLG MOSFETs.
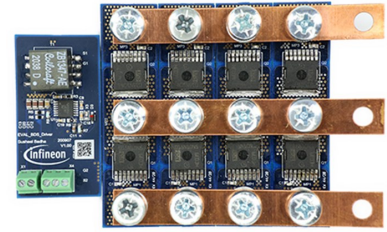
Features

> Stackable, allow high count of parallelization

> Onboard test points

> Graphical user interface

Benefits

> Ease of use

> Fast prototyping

> Manage high current rates >3 kA

Target applications

> LEVs

> AGVs (Service robots)

> Power tools

> Energy storage

> Backup systems

Product collaterals / Online support

[Board page](#)

Product overview incl. user manual link

OPN	SP Number
[EVALBDPSDDTOLGTOBO1](#)	SP005593433

EVAL_BDPS_DD_TOLL – Eval board with TOLL power for bidirectional battery disconnection using IPT015N10N5 and BAS3010B

This kit evaluation board is using OptiMOS™ power MOSFET in a TOLL package IPT015N10N5 and medium power AF Schottky diode BAS3010B. Bidirectional back-to-back MOSFET protection boards are used as static relays. Allowing safe and reliable bidirectional connection or disconnection of a circuit board. Typical functions of bidirectional disconnect boards are: hot swap and in-rush turn on current control, reverse polarity protection, eFuse and short circuit protection, turn on and off of a power source. The modular Back-to-Back board can be placed on the high or low side of the power bus. Additionally, the board is stackable, allowing for high parallelization count of TOLL MOSFETs.

Features

> Stackable, allow high count of parallelization

> Onboard test points

> Graphical user interface

Benefits

> Ease of use

> Fast prototyping

> Manage high current rates >3 kA

Target applications

> LEVs

> AGVs (Service robots)

> Power tools

> Energy storage

> Backup systems

Product collaterals / Online support

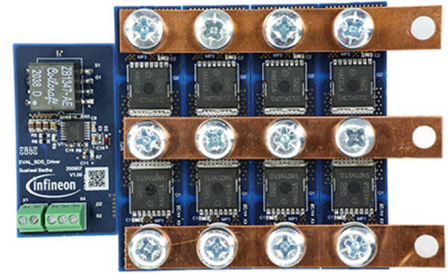Board page

Product overview incl. user manual link

OPN	SP Number
EVALBDPSDDTOLLTOBO1	SP005593431

EVAL_BDPS_DRIVER - Bidirectional high and low-side back-to-back MOSFET driver featuring EiceDRIVER™ 2EDF7175F

Disconnecting lithium ion batteries during critical conditions is an essential feature of a battery management system. Such conditions in-clude overcharge, undercharge and short circuit.
This driver evaluation board, with EiceDRIVER™ 2EDF7175F, allows a modular driving of high and low side back-to-back MOSFETs and a high MOSFET parallelization count. The board enables is best suited for fast and easy prototyping of battery protection of batteries packs with nominal voltages equal and below 48 V.

Features

> Stackable, allow high count of parallelization

> Onboard test points

Benefits

> Ease of use

> Fast prototyping

> Manage high current rates >3 kA

Target applications

> LEVs

> AGVs (Service robots)

> Power tools

> Energy storage

> Backup systems

Product collaterals / Online support

[Board page](#)

Product overview incl. user manual link

OPN	SP Number
[EVALBDPSDRIVERTOBO1](#)	SP005593430

EVAL_TOLT_DC36V_2KW - BLDC motor drive inverter power board based on TOLT with top-side cooling

The evaluation board features a motor drive inverter power stage using high efficiency, OptiMOS™ 5 power MOSFETs 60 V in top-side cooling TOLT package. The top-side cooled MOSFET solution for 3-phase BLDC motor drive leads to increase power handling capability. The power board operates with Infineon's XMC1300 drive card (KIT_XMC1300_DC_V1). Firmware is provided with trapezoidal control for 36 V BLDC motor with hall sensors. Additionally, the evaluation board includes three current shunts to allow compatibility with FOC commutation with XMC4400 drive card.
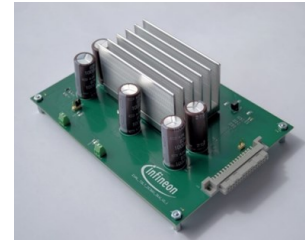
Features

> TOLT MOSFET – TO-Leaded top-side cooling package

> 36 V 3 - phase BLDC motor drive inverter

> Capable of both block commutation control and FOC control

> 0 V and 12.0 V on board power supplies for microcontroller and gate drivers, respectively

> Standard power board connector to plug in the XMC1300 and XMC4400

Benefits

> High common transient immunity

> Integrated isolation

> Wide interface selection

Target applications

> Battery powered power tools

> Motor control and drives

Product collaterals / Online support

[Board page](#)

Product overview incl. user manual link

OPN	SP Number
[EVALTOLTDC36V2KWTOBO1](#)	SP005920005

KIT_LGPWR_BOM010 - Power board for low voltage drives scalable power demo board

This kit power board module utilizing the OptiMOS™ 5 power MOSFET 100 V in TOLL package represents the power building block of the LVD scalable power demo board platform. It serves as a single half-bridge with power and gate drive interconnections, enabling easy buildup of any half-bridge-based power topology.

Features

> Board supports the LVD scalable power demo board platform

> Featuring OptiMOS™ 5 100 V MOSFET in TOLL package represents the power building block of the LVD scalable power demo board platform

> Serves as a single half - bridge with power and gate drive interconnections, enabling easy buildup of any half - bridge based power topology

> IMS PCB for increased cooling

> SMD power terminals with M5 thread

> Onboard test point terminals

Benefits

> Easy - to - use platform intended for initial evaluation of power MOSFETs in set - ups ranging from single half - bridge to three-phase inverter (motor drive topology)

> Provides an easy approach to power MOSFET paralleling, without need for soldering processes on Insulated Metal Substrate (IMS) boards

> All necessary connections established through onboard connectors

> Fast method of hardware requirement verification - the platform can be used instead of various preliminary test designs, thus shortening the initial design phase

Target applications

> Prototyping forklifts and LEVs (low speed cars, e - scooters, 3 - wheelers, golf cars)

> BPA BLDC motor drive

> Cordless power tools

Product collaterals / Online support

Board page

Product overview incl. user manual link

OPN	SP Number
KITLGPWRBOM010TOBO1	SP005952584

ModusToolbox™ Machine Learning Pack - Accelerated Machine Learning development with ModusToolbox™ Software

Machine Learning Pack Version 2.0, is a set of tools, libraries, and middleware that will enable developers to build, evaluate and benchmark pre-trained ML models. The ML Pack provides two inference engines, the Open Source Tensor-Flow Lite Micro and the Infineon Inference Engine. These libraries and tools help to rapidly deploy neural network (NN)-based classification - type ML applications. The Machine Learning Pack provides a mechanism to deploy ML models to Infineon microcontrollers in TensorFlow Lite or Keras file formats. Edge Impulse AutoML training platform is pre - integrated into ModusToolbox™ ML. ModusToolbox™ is a free download software!
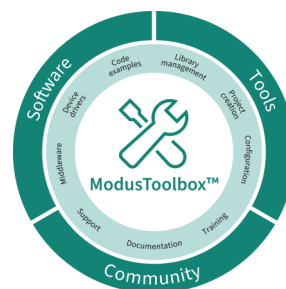
Features

> Model Import
>> Support for Keras - style (TensorFlow) H5 and .tflite model files
>> Most common layers like Dense, Conv1d / 2d, normalization, flatten, pooling etc.
>> Support for RNN and GRU

> Quantize and Compress
>> Post-training quantization
>> Infineon inference engine supports 8-bit, 16-bit and float
>> TFLM inference engine supports 8-bit and float

> Optimized Kernal
>> Code generation into ModusToolbox™ projects
>> PSoC™ 6 optimized libraries, pre - built for various quantizations

> Validation Framework
>> GUI and tools to import/generate data for testing

> Template projects to profile performance running on the PSoC™ 6 device

Benefits

> Shortens development time with the pre - integration of ML libraries
> Ease of use with the ML Configurator: a GUI tool with options to load pre - trained models and test data

Competitive advantage

> ModusToolbox™ ML comes with an emulation of the hardware before deploying it on hardware giving you data on how your model is going to perform.
> Provide an H5 model and deploy on TensorFlow Lite Micro inference engine for either interpreter or interpreter - less implementations
> Use ModusToolbox™ ML with any other Software such as graphics, connectivity, security to get to a full featured system and product faster
> Profile models on device by streaming data to the PC. Calibrate your model with test and validation data as well as visualization of the performance, post quantization

Target applications

> Machine Learning and AI applications at the Edge

Block diagram
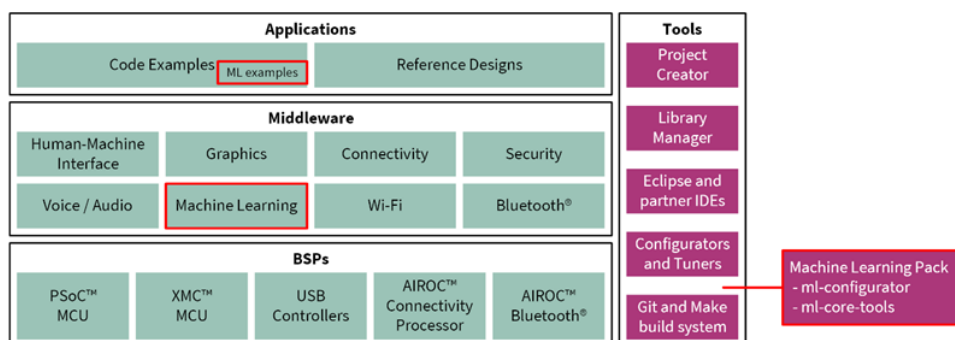
Product collaterals / Online support

Software page

Machine Learning Pack Version 2.0 Download Link

Recommended development kits supported by ModusToolbox™ Machine Learning incl. user manual link

OPN	SP Number
CY8CKIT-064B0S2-4343W	SP005672725
CY8CKIT-062S2-43012	SP005670449
CY8CKIT-062-WIFI-BT	SP005670445
CY8CKIT-028-SENSE	SP005678856

Release Announcement: ModusToolbox™ 3.1 available for download

ModusToolbox™ software is a set of tools that enable you to integrate our devices into your existing development methodology. ModusToolbox™ software consists of various libraries and middleware on GitHub, as well as an IDE and tools package installed on your computer. The ModusToolbox™ 3.1, a full feature release, is now available for download from the Infineon Developer Center. This release includes several new features targeted at enhancing the ModusToolbox™ development journey from 'Getting Started' to 'Final Hardware'. Below is a summary of the latest features included in this release, more details are available within the Release Notes.
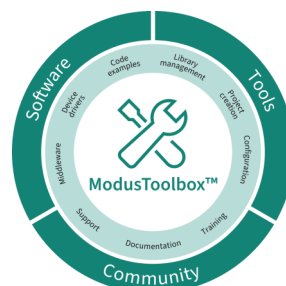
Features

> Dashboard application, serves as a central getting started utility, with easy access to key documentation, training modules, video tutorials, and relevant developer community forums

> Offline access for non-persistent internet connection using the Local Content Storage (LCS) Manager

> BSP Assistant can be launched directly from additional tools like project creator, library manager, and the dashboard

> Default toolchain configured within ModusToolbox™ v3.1 is Arm® GNU Toolchain 11.3. rel 1

> ModusToolbox™ v3.1 is supported on:

>> Windows 7SP1, 10, 11

>> macOS Catalina, Big Sur, Monterey

>> Ubuntu 18.04 LTS, 20.04 LTS, 22.04 LTS

Benefits

> Intuitive graphical tools for application setup and peripheral configuration

> Instant availability of new and updated GitHub content

> Comprehensive how - to videos and in - depth, self - paced training material

> Supports popular free and commercial IDEs

> Supports major host operating systems

Competitive advantage

> Flexible Development Environment with Graphical and full CLI options

> Middleware management and version control

> Low-level Peripheral Drivers and Hardware Abstraction APIs

> Application portability through self - contained BSPs and code generation

Target applications

> Any PSoC™ or XMC™ based embedded application

Recommended development kits supported by ModusToolbox™ incl. user guide link

OPN	SP Number
CY8CKIT-062S4	SP005670453
CY8CPROTO-062S3-4343W	SP005672753
CY8CKIT-062-WIFI-BT	SP005670445
CY8CPROTO-062-4343W	SP005672751
CY8CKIT-149	SP005672745
KITXMC13BOOT001TOBO1	SP001069656
CY8CKIT-062-BLE	SP005670443
CY8CPROTO-063-BLE	SP005672757
KITXMC72EVKTOBO1	SP005738295
CY8CKIT-041S-MAX	SP005716920

Product collaterals / Online support

Software page

Download Link