New Product Introduction

January 2022

XENSIV™ PAS CO2 sensor

2ED4820-EM - 48 V smart high-side MOSFET gate driver with SPI for automotive power distribution applications

MOTIX™ 6EDL7141 three-phase motor control gate driver IC for battery supplied BLDC motor control

EVAL_6EDL7141_TRAP_1SH evaluation board

New OptiMOS™ 5 product family of 60 V automotive MOSFETs

OptiMOS™ 5 power MOSFETs - 150 V in TO-Leadless package

OptiMOS™ IPOL voltage regulators with fast COT engine

PSoC® 61 Microcontrollers: Arm® Cortex®-M4 (CY8C61x4 Product Family)

PSoC® 62 Microcontrollers: Arm® Cortex®-M4/M0+ (CY8C62x4 Product Family)

BGA9H1BN6 - Highband High Performance LNA with Power-Save-Mode

256Mbit & 512Mbit HYPERRAM™ pseudo static random-access memories

SEMPER™ – High density, reliable NOR Flash for safety-critical applications

OPTIGA™ Trust M IoT Security Development Kit

IoT Sense Expansion Kit (CY8CKIT-028-SENSE)

XENSIV™ PAS CO2 sensor

The XENSIV™ PAS CO2 sensor is a real carbon dioxide (CO_2) sensor. Designed on the basis of the Photoacoustic Spectroscopy (PAS) concept, the sensor saves more than 75 percent space compared to existing commercial NDIR CO_2 sensors. Its direct ppm readings & high-end performance enable the fulfillment of the most stringent regulations for indoor air quality (e.g. Title 24 in California).
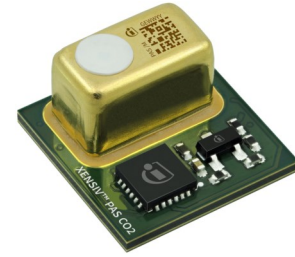
Tape & reel packing, SMD capability and simple design allow for a quicker and easier integration into customers' systems and makes the Infineon sensor the first real CO_2 sensor with SMD package compliant to standard JEDEC Pb-free reflow profiles. Suitable for high volume high speed pick & place processes for fast and automatic assembly. No need of post calibration.
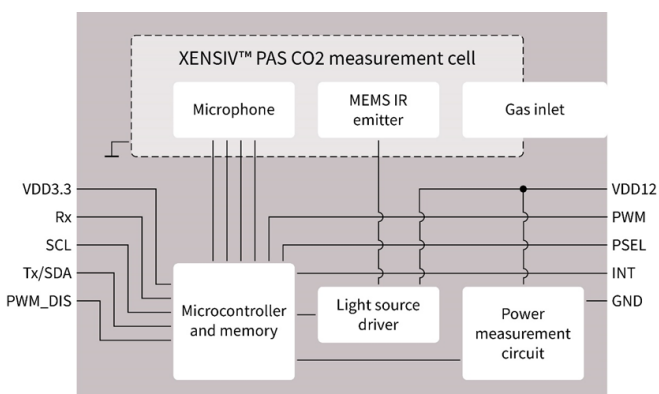
Features

> Exceptionally small form factor (14 x 13.8 x 7.5 mm^3)

> Highest accuracy and robust performance at ppm level (±30 ppm ±3% of reading)

> SMD package delivered in tape and reel (each 300 pieces)

> Advanced compensation and self-calibration algorithms

> Various configuration options (e.g. sampling rate, baseline calibration) and interfaces (UART, I2C, PWM)

Target applications

> Demand controlled ventilation: commercial & residential HVAC (heating, ventilation & air conditioning)

> Indoor air quality monitoring i.a. air purifiers, smart thermostats & air quality units, air quality devices/ monitors/ dashboards, smart lighting

> Smart farming

Block diagram

Benefits

> Space savings & opening up consumer application market

> High-quality data and compliance with most stringent regulations for indoor air quality (e.g. only sensor this size meeting California Title 24 requirements).

> Cost-effective high-volume assembly and easy system integration

> Suitable for standard high-speed pick & place process for fast & automatic assembly - No need of post calibration

> Customer flexibility thanks to variety of configuration options

Competitive advantage

> Real CO_2 sensor: Real CO_2 sensing is needed to have real measurements without cross-sensitivity to other gases or influences. No false/ true measurements

> PAS (Photo acoustic) technology: Four times smaller than current NDIR solutions in the market – saving up to 75% space

> Highest performance: Infineon XENSIV™ PAS CO2 sensors offers the highest accuracy combined with robust & stable performance (only sensor this size meeting California Title 24 requirements).

> Cost & time savings in production: No post calibration needed & only real CO_2 sensor with SMD package compliant to standard JEDEC Pb-free reflow profiles

> Reliable & strong partner: Infineon possesses the largest and earliest patent portfolio on miniaturized Photoacoustic Spectroscopy (PAS) technology

Product collaterals / Online support

Product page

Product brief

Application notes

Product overview incl. data sheet link

OPN	SP Number	Package
PASCO2V01AUMA2	SP005728008	LG-MLGA-14-1

2ED4820-EM - 48 V smart high-side MOSFET gate driver with SPI for automotive power distribution applications

The EiceDRIVER™ 2ED4820-EM is a smart high-side N-channel MOSFET Gate driver with two outputs controlled via SPI. The integrated powerful charge pump allows external MOSFETs to stay continuously on. Thanks to the enhanced turn-on and turn-off ability of the driver the number of MOSFETs could be easily scaled up to manage large currents in the order of several hundred amps while ensuring a fast switch on and off. The MOSFETs could be controlled in a back-to-back configuration either common mode or common source.

The integrated current sense amplifier supports high-side and even low-side current measurement with a dedicated monitoring output. The 2ED4820-EM comes along with several latching failure detections, to implement protections for the external MOSFETs, the load, and the power source. Parameters can be adjusted by SPI; monitoring data, configuration, warning, and failure detection registers can be read.
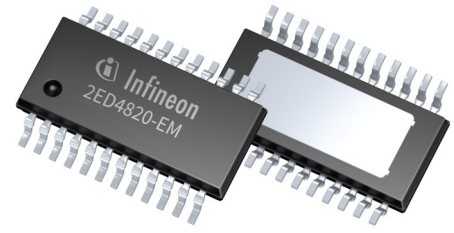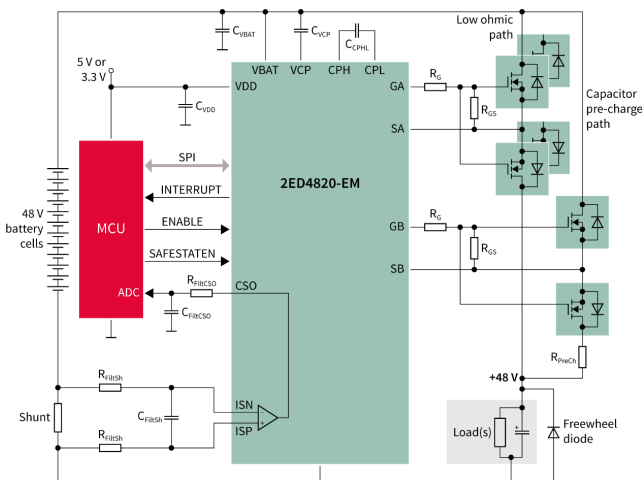
Features

> Extended supply voltage range: 20 - 70 V

> Two independent high-side gate driver outputs with 1 A pull-down, 0.3 A pull up for fast switch off/on

> Current sensing

> Device control, configuration, and diagnostic via SPI

> Configurable overcurrent/ short circuit protection

> Configurable Drain-Source overvoltage protection

> Gate under-voltage lockout (VGS)

> Ground loss detection

> AEC-Q100 qualification and ISO 26262 ready

Benefits

> Supports back-to-back MOSFET topologies (common drain or common source)

> SAFESTATEN input to trigger safe state mode in case of μC failure

> One bidirectional high- or low-side analog current sense interface with configurable gain to optimize power losses

> Robust against Vbat voltages up to 105 V and Vsource voltages versus Vbat of -90 V

Target applications

> Battery protection switch

> Input protection switch

> Static load and supply switch for high currents

Competitive advantage

> Outstanding robustness against over - and under voltage in 48 V boardnet

> Ability to manage an charge and discharge path, independently, while supporting an additional pre-charge path for capacitive loads

> Offers a low side shunt measurement to reuse the existing shunt resistor

Block diagram


Product collaterals / Online support

[Product page](#)

[Product brief](#)

[Video](#)

Product overview incl. data sheet link

OPN	SP Number	Package
2ED4820EMXUMA2	SP005629911	TSDSO-24

MOTIX™ 6EDL7141 three-phase motor control gate driver IC for battery supplied BLDC motor control

The MOTIX™ 6EDL7141 is Infineon's latest 3-phase motor control gate driver IC that enables the development of high-performance battery-operated products using BLDC or PMSM motors. Ideal applications include cordless power tools, gardening products, and automated guided vehicles. With over 50 programmable parameters using a built-in digital SPI interface, MOTIX™ 6EDL7141 is fully configurable to drive a wide range of MOSFETs to yield the best possible system efficiency.
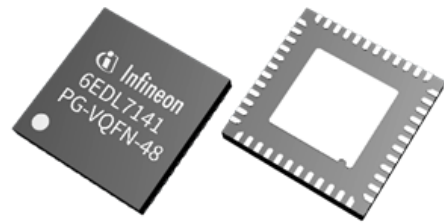
Features

> Integrated power supplies

> Adjustable gate drive parameters to optimized slew rate and EMI

> 3x current shunt amplifier

> Complete dedicated motor control protection suite

Benefits

> Reduced external components and PCB area

> Optimized efficiency and EMI

> Maximum flexibility to use different inverter FETs

> Highly accurate current sense while saving external components

> Higher dynamic range to increase signal resolution
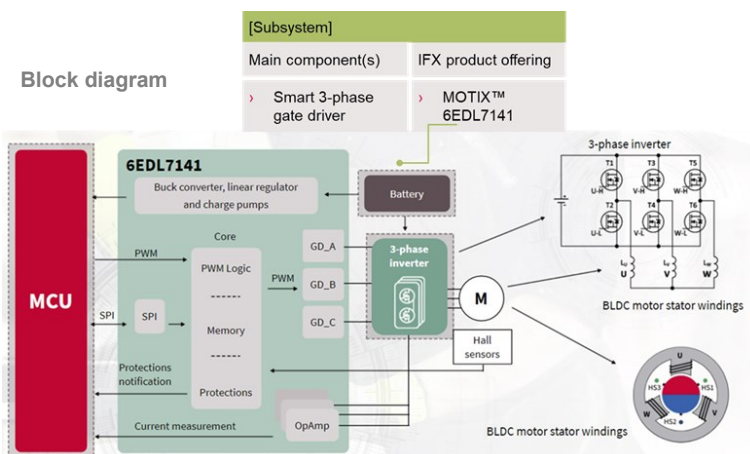
> Improve reliability and fault detection

Target applications

> Cordless power tools

> Automated guided robots

> Cordless gardening tools

Competitive advantage

> Dedicated 3-phase motor control gate driver IC for battery-operated products

> Fully programmable to provide the best system performance and efficiency

Block diagram



Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
6EDL7141XUMA1	SP001422546	TO-220 FP

EVAL_6EDL7141_TRAP_1SH evaluation board

EVAL_6EDL7141_TRAP_1SH evaluation board operates with motors that include integrated Hall sensors for rotor position sensing. This solution combines an XMC1400 series microcontroller with the MOTIX™ 6EDL7141 three-phase smart driver IC and Infineon OptiMOS™ 6 best-in-class power MOSFETs. The MOTIX™ 6EDL7141 reduces system component count and development time-to-market while at the same time significantly increasing the power density, system performance and peak power pulse capabilities. The graphical user interface (GUI) software tool designed for configuring the MOTIX™ 6EDL7141 is also available.
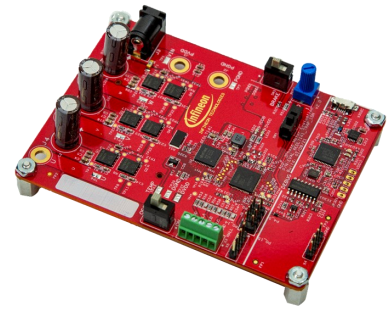
Features

> BLDC motor drive board using trapezoidal/block commutation

> Integrated and configurable on-board power supplies and gate drive outputs

> Configurable protection modes. Built-in debugger, direct connection to USB

> Operates independently or with GUI

Benefits

> High efficiency

> Low component count

> Configurable operating parameters

> Fully protected

Target applications

> Consumer Goods

> Drives

> Motor Control & Drives

> Power Tools

Competitive advantage

The EVAL_6EDL7141_TRAP_1SH features fully configurable operating parameters with on-board debugger ready for direct USB connection to PC. The BLDC motor drive board uses trapezoidal commutation based on the **MOTIX™ 6EDL7141** smart three-phase driver. The evaluation board operates independently or via Infineon **motor control GUI**

Block diagram
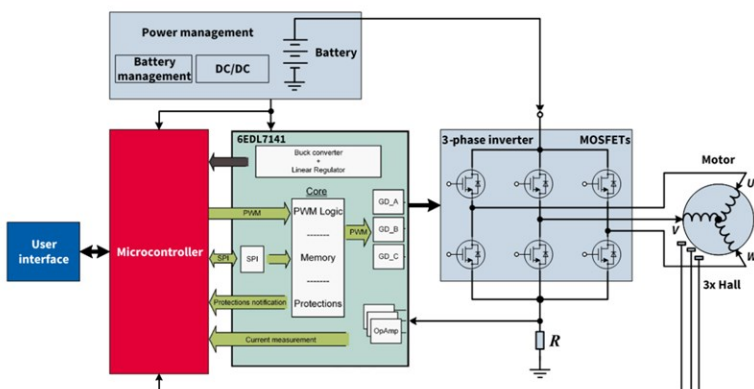
Product collaterals / Online support

Product page

Application notes

Video

## Product overview incl. data sheet link

OPN	SP Number
EVAL6EDL7141TRAP1SHTOBO1	SP005569898

New OptiMOS™ 5 products extending the 60 V automotive MOSFETs family

IAUZ40N06S5L050 & IAUC41N06S5N102

The new OptiMOS™ 5 technology for 60V MOSFETs provides provides leading performance with low $R_{DS(on)}$, QG and Gate capacitance. Additionally it minimizes conduction and switching losses.

The existing family is now extended with two new products in the industry standard small footprint packages S3O8 (3x3mm^2) and SingleSS08 (5x6mm^2) .
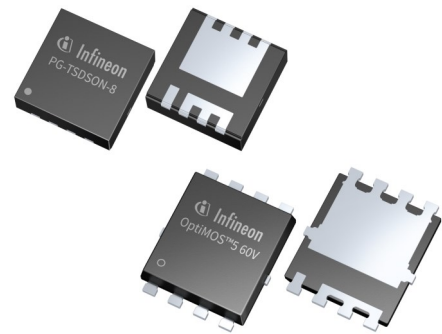
Features

> Optimized switching behavior

> Copper clips for higher current loading

Benefits

> Current loading up to 41 A

> Excellent thermal performance in compact form factor

> Improved EMC behavior

Target applications

> DC-DC

> ADAS

> Wireless Charging

> LED lighting

> CAV applications

Competitive advantage

> Infineon extends its portfolio of 60V automotive MOSFETs in SSO8 and S3O8 lead-less packages, resulting in a wider variety of MOSFETs in 40V, 60V, 80V and 100V. This results in less development cost for the customer when targeting a unified platform concept for different board nets

> System cost down and PCB area saving

> Higher performance in less area for less cost

> Market trend to leadless

Block diagram

Full LED headlamps
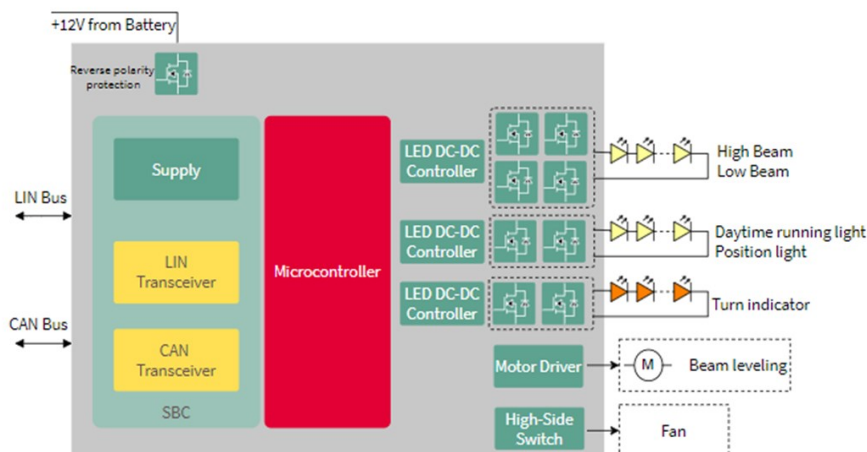
Product collaterals / Online support

Product family page

Product brief

Product overview incl. data sheet link

OPN	SP Number	Package
IAUZ40N06S5L050ATMA1	SP005423482	PG-TSDSON-8
IAUC41N06S5N102ATMA1	SP003244390	PG-TSDSON-8

OptiMOS™ 5 power MOSFETs - 150 V in TO-Leadless package

The new Infineon is expanding the OptiMOS™ 5 power MOSFETs portfolio in 150 V with the TO-Leadless package. The TOLL package is enabling high current design, higher power density and lower EMI. Thanks to its features it is the perfect fit for applications such as light electric vehicles, e-scooter, hotswap and battery management system.
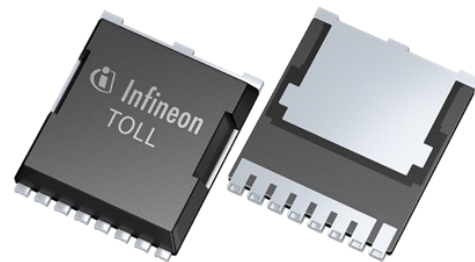
Features

> Highest current capability up to 300 A

> Significantly reduced electro migration due to improved solder contact area

> Very low package parasitics

> Leadless package

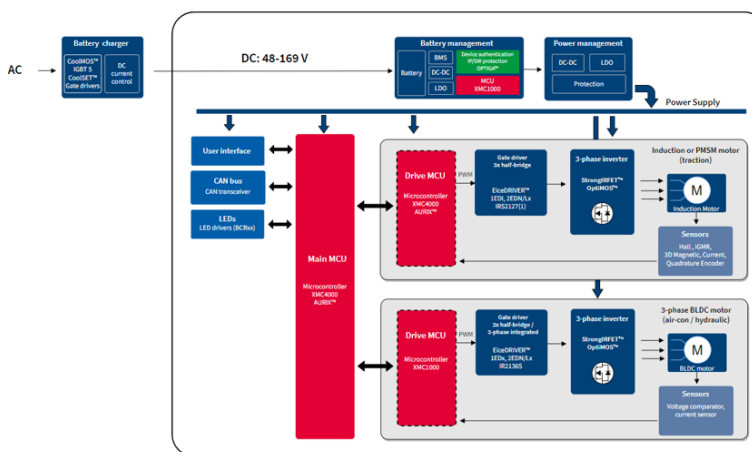## Target applications

> Light electric vehicles (LEV)

> Battery powered applications

> Point-of-loads (POL)

> Telecom

> e-fuse

Benefits

> Less paralleling and cooling required

> Highest system reliability

> Low EMI

> Enabling very compact design

Competitive advantage

> Low $R_{DS(on)}$

> High current rating

> Lower ringing and voltage overshoot compared to D²PAK

Block diagram

Product collaterals / Online support

Product family page

Product overview incl. data sheet link

OPN	SP Number	Package
IPT039N15N5ATMA1	SP005597138	PG-HSOF-8
IPT044N15N5ATMA1	SP005537524	PG-HSOF-8
IPT054N15N5ATMA1	SP005537529	PG-HSOF-8
IPT063N15N5ATMA1	SP005537534	PG-HSOF-8

OptiMOS™ IPOL voltage regulators with fast COT engine

This family features a fast COT engine that improves Vout regulation to save capacitors and allows higher fsw (up to 2 MHz) for increased density. Infineon OptiMOS™ 5 MOSFETs enable benchmark efficiency in a small footprint, making this the ideal solution to reduce power losses and to solve the heat challenges in thermally constrained applications, such as 3.3 V and 5 V main supply voltages, 1 V core voltages, or Tamb ≥ 85°C without airflow.
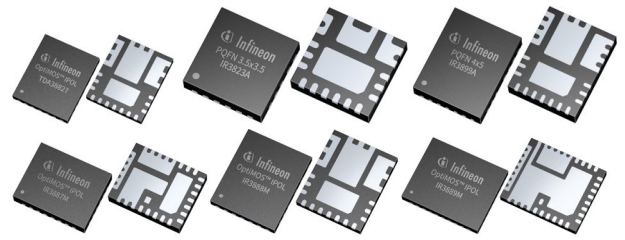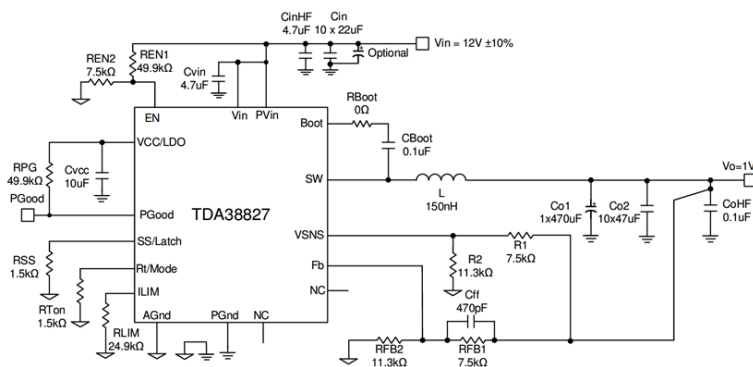
Features

> Infineon's FAST Constant-On-Time Engine with Floor Control

> Latest Infineon MOSFETs (OptiMOS™ 5) for enhanced efficiency

> Thermally able of 30 A in small 4mm x 5mm footprint

> High switching frequency (fmax 2 MHz) for density

Benefits

> Benchmark efficiency and excellent thermals

> Faster load transient response and enhanced output voltage regulation

> Easy design (no external compensation)

Target applications

> Servers

> Enterprise storage

> Netcom router and switches

> Datacom

> Telecom base stations

> Distributed POL

Competitive advantage

> High efficiency and reliability

> enable operations at 1MHz for higher density with good efficiency and thermals

> Low BOM – compensation free and minimum external components

> Enhanced Output Voltage regulation and faster transient response reduce the number of output capacitors for reduced BOM

Block diagram

Product collaterals / Online support

Product family page

Product overview incl. data sheet link

OPN	SP Number	Package
TDA38827AUMA1	SP005428490	PG-IQFN-22-2
IR3823AMTRPBFAUMA1	SP005435936	PG-IQFN-19-900
IR3899AMTRPBFAUMA1	SP005435933	PG-IQFN-24-901
IR3887MTRPBFAUMA1	SP001821802	PG-IQFN-29-1
IR3888MTRPBFAUMA1	SP001821814	PG-IQFN-22-2
IR3889MTRPBFAUMA1	SP001821820	PG-IQFN-36-2
TDA38820AUMA1	SP005409719	PG-IQFN-29-1
IR3447AMTRPBFAUMA2	SP005629928	PG-VIQFN-29
IR3888AMTRPBFAUMA1	SP005425206	PG-IQFN-22-2
IR3888BMTRPBFAUMA1	SP005565652	PG-IQFN-22-2

PSoC® 61 Microcontrollers: Arm® Cortex®-M4 (CY8C61x4 Product Family)

The PSoC 61 CY8C61x4 programmable line of microcontrollers, based on the PSoC 6 MCU platform, is a high-performance microcontroller based on Arm Cortex-M4 CPU, with low-power flash technology, CapSense® capacitive sensing, high-performance and low power analog peripherals, and standard communication and timing peripherals. It's designed for applications in the Internet of Things, such as wearables, smart home, industrial IoT, portable medical devices, etc.
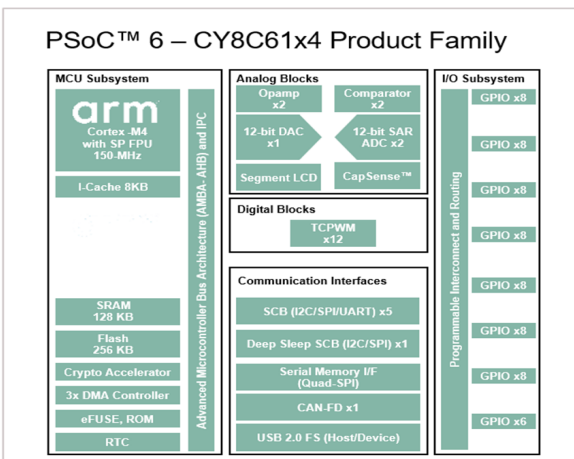
Features

> 150-MHz Arm® Cortex®-MF4 CPU, DMA controllers, Cryptographics Accelerators

> Ultra-low-power (0.9 V) or low-power (1.1 V) operation mode

> Up to 256 KB flash and 128 KB SRAM, QSPI Flash for external memory expansion

> Analog blocks operational in device active, sleep, deep sleep power modes

> CapSense capacitive sensing (CSD) block, Segment LCD drive capability

> Twelve timer/counter/pulse-width modulator (TCPWM) blocks

> Five serial communication blocks (SCBs), one deep sleep SCB

> CAN-FD block, USB Full-Speed Device/Host

Target applications

> Smart home automation

> Smart building

> Industrial Control

> Medical/Healthcare

Block diagram:

Benefits

> Compute, security, low power - optimized right from the hardware level

> Integration of discrete analog IC's functionality in MCU

> Two ADCs for simultaneous analog sampling applications

> Integration of Touch HMI feature in MCU

> CAN-FD connectivity for Industrial applications

> Easy to use software for prototyping and productizing end applications

Competitive advantage

> PSoC 6 CY8C61x4 MCU integrate the right mix of compute capability, analog and digital peripherals, communication interfaces, low power architecture for various sensing and general purpose MCU applications

> Arm Cortex-M4, operational up to 150 MHz, can be used for compute intensive tasks, and can be dynamically switched to 50 MHz operation mode to save power as needed

> Dual 12-bit SAR ADCs with hardware sequencing enabling simultaneous analog sampling applications

> Integrates on-chip DAC, Opamps, Comparators. All analog peripherals including ADC operational in low power modes

> Integrates CAN-FD for industrial applications, and other peripherals like Timer / Counter / PWM, USB-FS, SPI / I2C / UART

> Fourth generation Capacitive touch sensing IP for robust, reliable touch user interfaces

Product collaterals / Online support

[Product family page](#)

Product overview incl. data sheet link

OPN	Package
[CY8C6144AZI-S4F92](#)	64-TQFP
[CY8C6144LQI-S4F92](#)	68-QFN
[CY8C6144AZI-S4F93](#)	80-TQFP

PSoC® 62 Microcontrollers: Arm® Cortex®-M4/M0+ (CY8C62x4 Product Family)

PSoC® 62 CY8C62x4 performance line, built on an ultra low-power 40-nm platform, is a combination of Arm® Cortex™-M4 and Arm Cortex-M0+ CPUs, with low-power flash technology, CapSense® capacitive sensing, high-performance and low power analog peripherals, and standard communication and timing peripherals. It's designed for applications in the Internet of Things, such as wearables, smart home, industrial IoT, portable medical devices, etc.
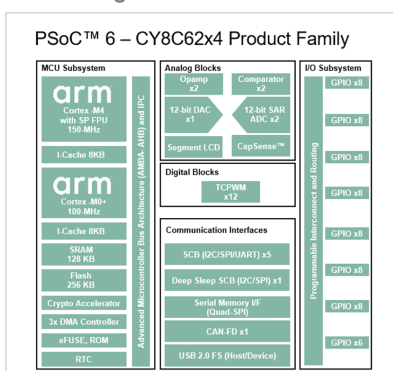
Features

> Dual-core CPU architecture: 150-MHz Arm® Cortex®-M4 and 100-MHz Arm Cortex-M0+. DMA controllers, Cryptographic Accelerators

> Ultra-low-power (0.9 V) and low-power (1.1 V) operation mode

> Up to 256 KB flash and 128 KB SRAM

> QSPI Flash for external memory expansion

> Two low-power comparators, two 12-bit SAR ADCs (2-Msps), 12-bit VDAC, two Opamps

> Analog blocks operational in device active, sleep, deep sleep power modes

> CapSense capacitive sensing (CSD) block, Segment LCD drive capability

> Twelve timer/counter/pulse-width modulator (TCPWM) blocks

> Five serial communication blocks (SCBs), one deep sleep SCB

> CAN-FD block, USB Full-Speed Device/Host

Target applications

> Smart home automation

> Smart building

> Industrial control

> Medical/Healthcare

Benefits

> Compute, security, low power - optimized right from the hardware level

> Integration of discrete analog IC's functionality in MCU

> Two ADCs for simultaneous analog sampling applications

> Integration of Touch HMI feature in MCU

> CAN-FD connectivity for Industrial applications

> Easy to use software for prototyping and productizing end applications

Competitive advantage

> PSoC 6 CY8C62x4 MCU integrate the right mix of compute capability, analog and digital peripherals, communication interfaces, low power architecture for various sensing and general purpose MCU applications

> Dual core CPU architecture enables the Arm Cortex-M4 to be used for compute intensive tasks, and Arm Cortex-M0+ as a low power, secure CPU

> Dual 12-bit SAR ADCs with hardware sequencing enabling simultaneous analog sampling applications

> Integrates on-chip DAC, Opamps, Comparators. All analog peripherals including ADC operational in low power modes

> Integrates CAN-FD for industrial applications, and other peripherals like Timer / Counter / PWM, USB-FS, SPI / I2C / UART

> Fourth generation Capacitive touch sensing IP for robust, reliable touch user interfaces

Product collaterals / Online support

Product page

Block diagram

PSoC™ 6 – CY8C62x4 Product Family

Product overview incl. data sheet link

OPN	Package
CY8C6244AZI-S4D92	64-TQFP
CY8C6244LQI-S4D92	68-QFN
CY8C6244AZI-S4D93	80-TQFP

BGA9H1BN6 - Highband High Performance LNA with Power-Save-Mode

The BGA9H1BN6 is designed for 4G and 5G applications covering 3GPP bands between 2.5 and 2.7 GHz (for band n41). Thanks to a high gain and an ultra-low noise figure performance of the LNA the system sensitivity is significantly improved compared to conventional LNAs. The GPIO interface provides a straightforward control over multiple operation modes. Next to the high gain mode and bypass mode, a power-save and a high performance mode can be selected to increase system dynamic. Thanks to the low-power mode with 2.2 mA current consumption and 1.2 V operation voltage the overall power consumption is extremely low.

Features

> Power gain: 20.0 dB

> Low noise figure: 0.5 dB

> Low current consumption: min. 2.2 mA

> Frequency range from 2.5 to 2.7 GHz

> Supply voltage: 1.1 to 3.3 V

> GPIO control interface

> Multi-state control

> Small form factor 1.1 mm x 0.7 mm

> High EMI robustness

> RoHS and WEEE compliant package

Benefits

> NF is low and Gain is high

> Multi-state control gives flexibility of application
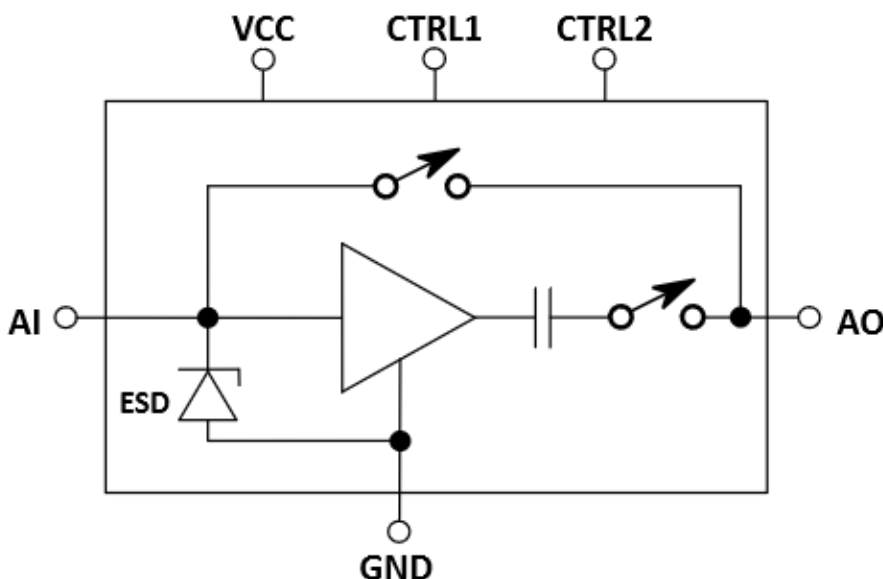
Competitive advantage

> Multi-state control: Gain- and Bypass-Modes

> High Linearity

> High gain: 20.0 dB

Target applications

> LTE / 5G Smartphones

> Wearables

> IoT

Block diagram

## Product collaterals / Online support

Product page

Product overview incl. data sheet link

OPN	SP Number	Package
BGA9H1BN6327XTSA1	SP002367716	PG-TSNP-6-10

256Mbit & 512Mbit HYPERRAM™ pseudo static random-access memories

HYPERRAM™ is a high-speed, low-pin-count, low-power self-refresh Dynamic RAM (DRAM) for high-performance embedded systems requiring expansion memory for scratchpad or buffering purposes.

HYPERRAM™ 2.0 supports HYPERBUS™ and Octal xSPI interfaces that are compliant with the JEDEC xSPI standard. HYPERRAM™ 2.0 offers a read/write bandwidth of up to 400 MBps in DDR mode. It comes in the industry's smallest 6 mm x 8 mm 24-ball BGA package and offers an extended operating temperature range (-40C to +105C). Industrial, Ext-Industrial, Auto-Grade 3, Auto-Grade 2 and Auto-Grade 1 temperature grades are available and it is AEC-Q100 qualified. These products are available in 1.8 V voltage option.
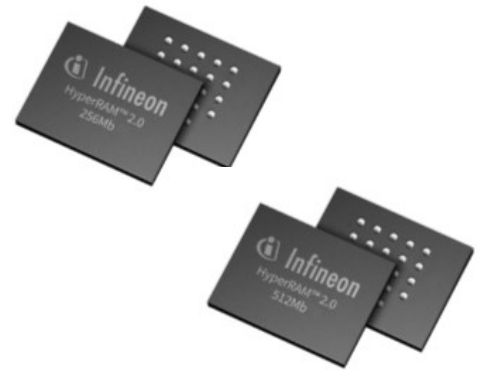
Features

> Operating voltage range: 1.7–2.0 V

> HYPERBUS™ and Octal xSPI interfaces compliant with JEDEC xSPI standard

> Double data rate (DDR) read/write bandwidth: 400 MBps

> Configurable burst modes (Linear burst, Wrapped length burst and Hybrid burst)

> Deep Power Down : 10 µA (max) and Hybrid Deep Sleep: 25 µA (typ) at 85 ºC [256Mb]

> Active Current: 25 mA (max) at 85 ºC [256Mb]

> Partial Memory Array Refresh feature to optimize battery performance

> Industrial grade (-40 ºC to +85 ºC) and Extended-industrial grade (-40 ºC to +105 ºC)

Target applications

> Automotive: Instrument Clusters, Infotainment Systems, Telematics Application, ECU

> Industrial: Machine Vision, HMI Systems, Medical Imaging

> Consumer: Wearable Devices, IOT Modules, Communication devices, Gateways

Benefits

> Low pin count – Ensures lesser IOs are utilized on the MCU or FPGA for interfacing

> Small package – Ensures lower footprint on board

> Low power – Suitable for battery operated applications

Competitive advantage

> Low pin count – Only 12 pins

> Small foot print – 48mm^2 24 BGA package

> Low power – 25 mA max. active power

> High throughput – 400 MBps

> High density – Up to 512Mb

Product collaterals / Online support

Product family page

Application Note – Getting started with HYPERRAM™

Application Note: – Migrating from HYPERRAM™ 1.0 to HYPERRAM™ 2.0

Whitepaper

Product overview incl. data sheet links

OPN	Package
S80KS2562GABHI020	24-FBGA
S80KS2563GABHI020	24-FBGA
S80KS5122GABHI020	24-FBGA
S80KS5123GABHI020	24-FBGA
S80KS2562GABHV020	24-FBGA
S80KS2563GABHV020	24-FBGA
S80KS5122GABHV020	24-FBGA
S80KS5123GABHV020	24-FBGA
S80KS2562GABHA020	24-FBGA
S80KS2563GABHA020	24-FBGA
S80KS5122GABHA020	24-FBGA
S80KS5123GABHA020	24-FBGA
S80KS2562GABHB020	24-FBGA
S80KS2563GABHB020	24-FBGA
S80KS5122GABHB020	24-FBGA
S80KS5123GABHB020	24-FBGA
S80KS2562GABHM020	24-FBGA
S80KS2563GABHM020	24-FBGA
S80KS5122GABHM020	24-FBGA
S80KS5123GABHM020	24-FBGA

SEMPER™ – High density, reliable NOR Flash for safety-critical applications

SEMPER™ NOR Flash memory provides the high-performance and critical safety features needed for automotive, industrial, and communications applications. It is architected and designed for functional safety, making it the industry's first ASIL-B-compliant and ASIL-D-ready NOR Flash. Infineon endurance flex architecture enables individual partitions to be configured for 1+ million program/erase cycles or 25 years data retention at a wide range of temperatures (-40° C to +125° C).
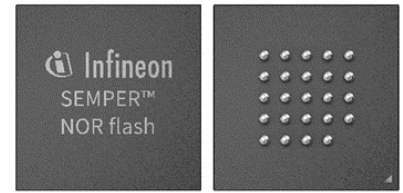
Features

> Functional Safety: ASIL-B

> Longevity of supply

> Solutions Hub – SDK, kits & other resources

> Ecosystem – Chipset and partner support

> Density: 256 Mb, 512 Mb, 1 Gb, 2 Gb, 4 Gb

> Voltage: 1.8V, 3.0V

> Interface: Quad SPI, xSPI (Octal and HYPERBUS™)

> Performance: Quad SPI (102MB/s read BW), xSPI (400MB/s read BW)

> Support for extended temperature ranges: Automotive Grade 1 (-40C to 125C)

> Packages: BGA, SOIC, WSON

Target applications

> Industrial: PLC, CNC, HMI, sensors, smart meters, medical portables

> Automotive: ADAS/AD, cluster, digital cockpit, powertrain, gateway

> Communications: 5G radio head and base stations

> Datacenter: board management card, smart NIC, acceleration cards

Benefits

> Architected for functional safety, ASIL-B compliant, ASIL-D and SIL 2 ready

> High density solutions with industry standard interfaces (QSPI and JEDEC xSPI)

> Highest reliability, 25 years of retention, 1+ million program/erase cycles

> Fast time to market using Infineon's Solutions Hub

> Global presence and chipset vendors partnerships for solution offering

Competitive advantage

> High Density up to 4 Gb

> High Performance up to 400MB/s read BW

> High Reliability 25 years of retention, 1+ million program/erase cycles

> Automotive AEC-Q100 qualified, Automotive Grade 1 support – up to 125C

> Support for eXecute-in-Place (XiP)

> Long term availability

Product overview incl. data sheet links

OPN	Package
S25HL512TFABHI010	24-FBGA
S25HL512TFAMHI010	16-SOIC
S25HL512TFANHI010	8-WSON
S25HS512TFABHI010	24-FBGA
S25HS512TFAMHI010	16-SOIC
S25HS512TFANHI010	8-WSON
S25HL01GTFABHI030	24-FBGA
S25HL01GTFAMHI010	16-SOIC
S25HS01GTFABHI030	24-FBGA
S25HS01GTFAMHI010	16-SOIC
S25HL02GTDPBHV050	24-MCP
S26HL512TFPBHI010	24-FBGA
S26HS512TGABHI010	24-FBGA
S28HL512TFPBHI010	24-FBGA
S28HS512TGABHI010	24-FBGA
S26HL01GTFPBHI030	24-FBGA
S26HS01GTGABHI030	24-FBGA
S28HL01GTFPBHI030	24-FBGA
S28HS01GTGZBHI030	24-FBGA

**Product collaterals / Online support**

Product page

OPTIGA™ Trust M IoT Security Development Kit

The OPTIGA™ Trust M IoT Security Development Kit is the easiest way to develop and evaluate end-to-end security use cases for your IoT devices.

The kit enables customers to prototype various security use cases and build full-featured IoT applications.

The board includes:

- **OPTIGA™ Trust M security solution**
- **PSoC™ 62, an Arm® Cortex®-M4/M0+ microcontroller**
- **AIROC™ CYW43012, an ultra-low-power single-chip combo device featuring 1x1 dual-band 2.4 GHz and 5 GHZ Wi-Fi 4 (802.11n) and Bluetooth® 5.0**
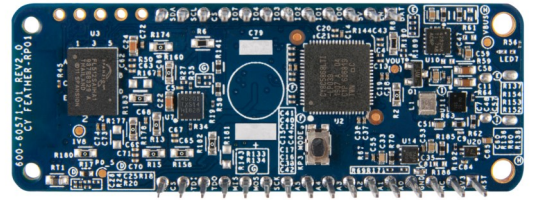
Features

> OPTIGA™ Trust M IoT Security Development Kit featuring Adafruit Feather compatibility, OPTIGA™ Trust M, PSoC™ 62 MCU and AIROC™ Wi-Fi + Bluetooth® combo

> ModusToolbox™ support: The kit is supported by ModusToolbox™. The OPTIGA™ Trust M host library is available as open source code under **MIT LICENSE** on our **GitHub repository**

> Pre-configured kit with two security use cases:

> > AnyCloud MQTT connectivity to AWS

> > Secured zero-touch cloud provisioning using CIRRENT™ Cloud ID

Benefits

> Instant evaluation of secured cloud communication and secured cloud provisioning use cases

> All main board components are provided by Infineon and supported via ModusToolbox™

> Flexibility to quickly develop full-featured IoT device prototypes

Target applications

> Smart homes

> Smart buildings

> Industrial automation / PLCs

> Robots

Competitive advantage

This development board is delivered with two ready-to-use security use cases:

> Secured communication with AWS over MQTT using AnyCloud with crypto support from OPTIGA™ Trust M

> Secured zero-touch cloud provisioning using CIRRENT™ Cloud ID and the pre-provisioned X.509 certificate delivered with the OPTIGA™ Trust M

Product collaterals / Online support

Product page

Kit start guide

Product overview

OPN	SP Number
TRUSTMIOTSDKXHSA1	SP005632406

IoT Sense Expansion Kit (CY8CKIT-028-SENSE)

The IoT sense expansion kit is a low-cost Arduino™ UNO compatible shield board that can be used to easily interface a variety of sensors with the PSoC™ 6 MCU platform, specifically targeted for audio and machine learning applications.

This shield can be used with ModusToolbox™ Machine Learning software. ModusToolbox™ Machine Learning (ML) enables you to rapidly evaluate and deploy Machine Learning models on Infineon MCUs.

Features

> High-precision, excellent pressure noise performance and high-stability XENSIV™ digital barometric air pressure sensor with built-in temperature sensor

> Two high-performance XENSIV™ MEMS digital microphones making use of Infineon's dual-backplate MEMS technology to deliver a 105-dB dynamic range and high output linearity up to 130 dBSPL

> Absolute orientation sensor combining 3-axis accelerometer, gyroscope, and geomagnetic sensor

> Wake-on-sound piezoelectric MEMS microphone

> Low-power stereo audio codec featuring Class-D speaker drivers to provide 1 W per channel into 8 Ω loads and an audio jack socket

> I2C-based 124 x 64 OLED display

> Arduino™ UNO compatible headers • Arduino™ UNO compatible headers

Target applications

> Smart home

> Smart building

> Industrial Control

> Medical/Healthcare

Block diagram:

Functional Block Diagram
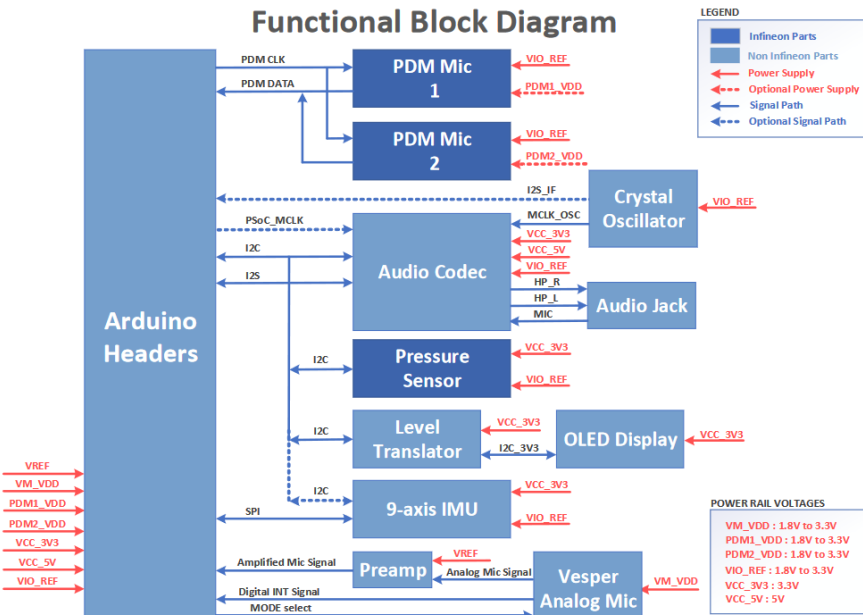
Product collaterals / Online support

[Product page](#)

[Kit start guide](#)

[Kit guide](#)

[Kit schematics](#)

[Release notes](#)

Product overview

OPN
CY8CKIT-028-SENSE