



## New Product Introduction

October 2020

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# PrimePACK™ with IGBT5 and .XT

PrimePACK™ with IGBT5 and .XT is an excellent answer to the demanding requirements of wind converters due to the combination of .XT and IGBT5.

The use of sophisticated .XT interconnection technology offers 10 times higher power cycling capabilities than the standard IGBTs and the IGBT5 chip technology offers 25 % higher power density than its predecessors.

In a nutshell Prime PACK™ IGBT5.XT enables:

- A. Increase the power with smaller number of modules.
- B. Benchmark in lifetime and reliability (lower FIT rate)

PrimePACK™ with IGBT5 and .XT is also being used for solar central inverters, industrial drives as well as commercial/construction and



## Features

- > IGBT5 chip technology
- > .XT interconnection technology using sintering and copper bond wires
- > 1200 A, 1500 A and 1800 A in both 1200 V and 1700 V
- > Half-bridge configuration
- > Also available with pre-applied thermal interface material (TIM)
- > HV-H3TRB humidity robustness
- > PrimePACK™ package with CTI > 400

## Benefits

- > Increased power density by 25%
- > 10 times higher power cycling capabilities, thus 10 times longer lifetime than standard IGBTs
- > Less cooling effort for same output power
- > Higher system overload conditions

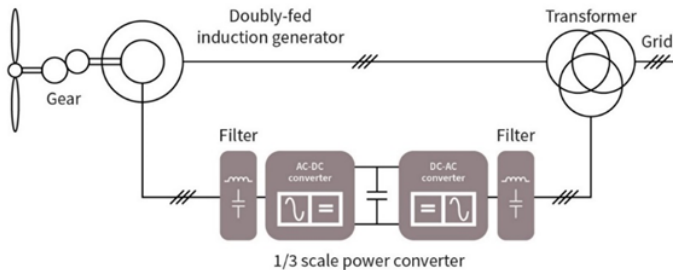
## Target applications

- > Wind energy systems
- > Central inverter solutions
- > Motor control and drives
- > Commercial/construction and agricultural vehicles

## Competitive advantage

PrimePACK™ with IGBT5 and .XT are power modules which offer high power density and lifetime for the design of reliable power converters, thereby giving customers the best return-on-investment

## System diagram



## Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">FF1200R17IP5BPSA1</a>	SP001426000	AG-PRIME2-5
<a href="#">FF1200R17IP5PBPSA1</a>	SP001663854	AG-PRIME2-5
<a href="#">FF1500R12IE5BPSA1</a>	SP001630414	AG-PRIME3+-5
<a href="#">FF1500R12IE5PBPSA1</a>	SP002397954	AG-PRIME3+-5
<a href="#">FF1500R17IP5BPSA1</a>	SP001630390	AG-PRIME3+-5
<a href="#">FF1500R17IP5PBPSA1</a>	SP002813348	AG-PRIME3+-5
<a href="#">FF1800R12IE5BPSA1</a>	SP001495678	AG-PRIME3+-5
<a href="#">FF1800R12IE5PBPSA1</a>	SP001662006	AG-PRIME3+-5
<a href="#">FF1800R17IP5BPSA1</a>	SP001310752	AG-PRIME3+-5
<a href="#">FF1800R17IP5PBPSA1</a>	SP001635768	AG-PRIME3+-5

## Product collaterals / Online support

- [Product family page](#)
- [IGBT module community](#)
- [IPOSIM simulation tool](#)
- [Webinar](#)

## CoolSiC™ MOSFETs 1200 V in D<sup>2</sup>PAK-7L package

Infineon presents CoolSiC™ MOSFET 1200 V class in a new D<sup>2</sup>PAK-7L package. A broad  $R_{DS(on)}$  portfolio of 30 mΩ up to 350 mΩ enables top efficiency in a wide power range of industrial power supplies, chargers, as well as various Ampere ratings in servo drives.

CoolSiC™ trench MOSFET technology is optimized to combine performance with reliability in operation, complemented by a 3 μs short-circuit withstand time. Thanks to .XT interconnection technology, the thermal capabilities in a small package form factor are significantly improved. XT technology allows 30% extra loss to be dissipated through the chip-package interconnection, compared to standard packaging interconnection. The new CoolSiC™ .XT portfolio shows best-in-class thermal performance and cycling capabilities: up to 14% higher output current, or doubled switching frequency, or 10-15°C lower operating temperatures compared to standard interconnection.



### Features

- > Very low switching losses
- > Short-circuit withstand time, 3 μs
- > Fully controllable dV/dt
- > Benchmark gate threshold voltage,  $V_{GS(th)} = 4.5 \text{ V}$
- > Robustness against parasitic turn-on, 0 V turn-off gate voltage can be applied
- > Robust body diode for hard commutation
- > .XT interconnection technology for best-in-class thermal performance
- > 1200 V optimized SMD package with creepage and clearance distances, > 6.1 mm on PCB
- > Sense pin for optimized switching performance

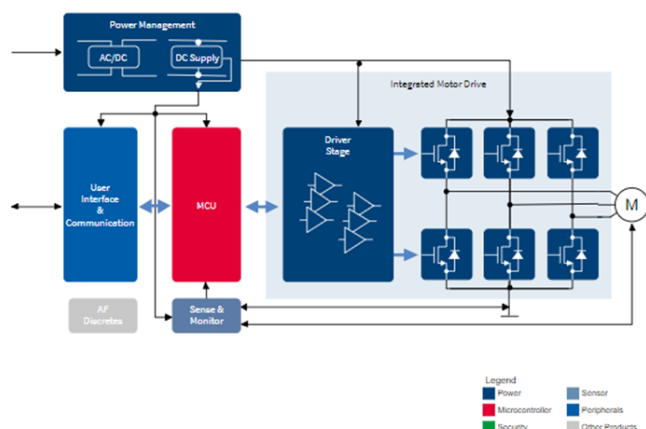
### Benefits

- > Efficiency improvement
- > Enabling higher frequency
- > Increased power density
- > Cooling effort reduction
- > Reduction of system complexity and cost
- > SMD package enables direct integration into PCB, with natural convection cooling without extra heatsink

### Target applications

- > Drives
- > Infrastructure - Charger
- > Energy generation – Solar string inverter and solar optimizer
- > Industrial power supplies – Industrial UPS

### Application diagram



### Competitive advantage

- > Compact solutions by reducing part count and form factors
- > Implementation of passive cooling leads to fanless drives
- > Motor and inverter integration

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IMBG120R030M1HXTMA1</a>	SP004463784	PG-TO263-7
<a href="#">IMBG120R045M1HXTMA1</a>	SP005349829	PG-TO263-7
<a href="#">IMBG120R060M1HXTMA1</a>	SP004363744	PG-TO263-7
<a href="#">IMBG120R090M1HXTMA1</a>	SP004463788	PG-TO263-7
<a href="#">IMBG120R140M1HXTMA1</a>	SP004463792	PG-TO263-7
<a href="#">IMBG120R220M1HXTMA1</a>	SP004463796	PG-TO263-7
<a href="#">IMBG120R350M1HXTMA1</a>	SP004463802	PG-TO263-7

### Product collaterals / Online support

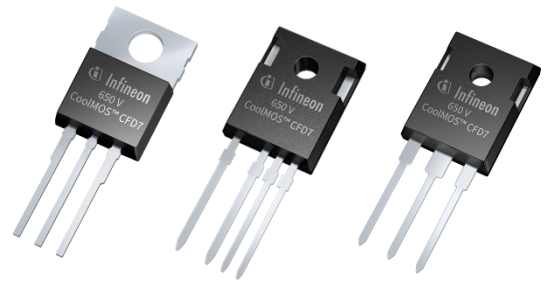
[Product family page](#)

[Community](#)

## 650 V CoolMOS™ CFD7 superjunction MOSFETs

The 650V CoolMOS™ CFD7 family is the voltage-range extension of Infineon's well-established CoolMOS™ CFD7 family, the successor to the CoolMOS™ CFD2.

It allows for the highest efficiency and power density levels in soft-switching applications, enabled by an additional 50 V breakdown voltage, an integrated fast body diode, improved switching performance, and excellent thermal behavior.



### Features

- > Ultrafast body diode & very low  $Q_{rr}$
- > 650 V breakdown voltage
- > Best-in-class  $R_{DS(on)}$  / package combinations
- > Significantly reduced switching losses compared to competition
- > Lowest  $R_{DS(on)}$  dependency over temperature

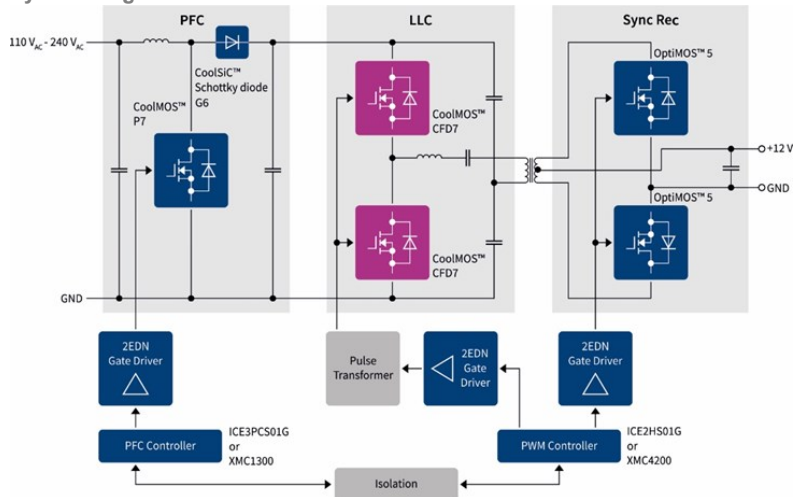
### Benefits

- > Excellent hard-commutation ruggedness
- > Extra safety margin for designs with increased bus voltage
- > Enabling increased power density
- > Outstanding light-load efficiency in industrial SMPS applications
- > Improved full-load efficiency in industrial SMPS applications
- > Price competitiveness compared to alternative offerings in the market

### Target applications

- > Server
- > Telecom
- > Solar
- > EV-charging

### System diagram



### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IPW65R029CFD7XKSA1</a>	SP005413355	PG-TO247-3
<a href="#">IPZA65R029CFD7XKSA1</a>	SP005413356	PG-TO247-4
<a href="#">IPP65R060CFD7XKSA1</a>	SP005433687	PG-TO220-3
<a href="#">IPW65R060CFD7XKSA1</a>	SP005433699	PG-TO247-3
<a href="#">IPP65R041CFD7XKSA1</a>	SP005413358	PG-TO220-3
<a href="#">IPW65R041CFD7XKSA1</a>	SP005413359	PG-TO247-3

### Product collaterals / Online support

[Product family page](#)

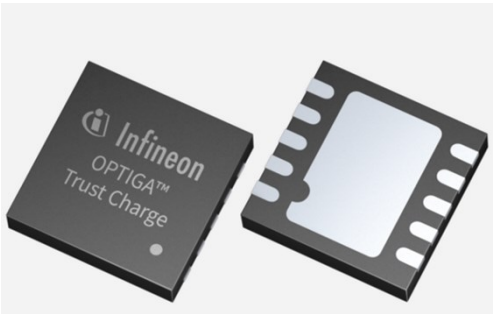
[Product brief](#)

[Application note](#)

# OPTIGA™ Trust Charge SLS32AIA

Infineon’s OPTIGA™ Trust Charge is a turnkey solution providing secured device authentication for inductive wireless charging according to the Qi 1.3 wireless charging standard. Secured authentication with OPTIGA™ Trust Charge contributes to device and user safety by protecting against fake chargers.

The OPTIGA™ Trust Charge authentication device is certified to Common Criteria EAL6+ (high), thus exceeding the security requirements of the Qi 1.3 standard. Infineon is able to provide personalization and injection of the certificates and keys specified by the WPC in a secured and certified environment, making it easy for customers to build in security capabilities.



### Features

- > WPC Qi 1.3 authentication
- > Common Criteria EAL6+ (high) certified hardware
- > ECDSA P-256 authentication
- > NIST P-256, SHA-2 cryptography
- > Up to 10 kB user memory
- > Qi certificate format
- > PKI
- > I<sup>2</sup>C serial communication
- > USON10-2 package (3x3 mm)
- > Extended temperature range version available
- > Full turnkey solution incl. drivers, SW library, preimplemented certificate(s) and key pair(s)

### Target applications

- > Mobile phones, tablets
- > Cameras, wearables, health tech devices
- > Accessories and other small personal electronic devices
- > Industrial control and building automation/smart building

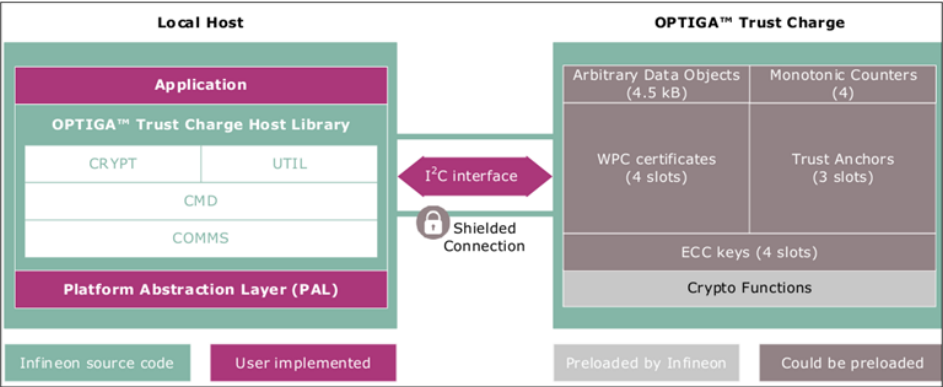
### Benefits

- > Suitable for Qi 1.3 wireless charging – now the de-facto standard for mobile chargers
- > With Common Criteria EAL6+ (high) certified hardware, OPTIGA™ Trust Charge exceeds WPC’s security requirements
- > Preloading of WPC-specific personalized keys and certificates at secure Infineon fabs to simplify key logistics and security integration according to Qi 1.3 standard
- > Easy integration thanks to full turnkey design and complete solution offering including embedded software, host software, a development board, a reference board and documentation
- > Optimized for small devices with tiny package and extended temperature range, bringing added flexibility to a wide range of consumer and industrial applications

### Competitive advantage

- > Easy and cost efficient to build security into their platform
- > Enables fulfillment of Qi 1.3 security requirements
- > System compliant to international regulations
- > Secure authentication with OPTIGA™ Trust Charge ensures safety of devices by protecting against fake chargers.
- > Prevents damage caused by unauthorized chargers
- > Protects consumers against safety hazards
- > Protects manufacturers against liability and reputation loss

### System block diagram



### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">SLS32AIA020U2USON10XTMA1</a>	SP005411068	PG-USON-10
<a href="#">SLS32AIA020U3USON10XTMA1</a>	SP005430111	PG-USON-10

### Product collaterals / Online support

- [Product page](#)
- [Product brief](#)



## OPTIGA™ Connect IoT OC2321

OPTIGA™ Connect IoT is a ready-to-connect embedded SIM (eSIM) solution for cellular IoT devices. This turnkey solution allows easy, secured and cost-optimized deployment and management of cellular-enabled IoT devices at scale.

It comes with a pre-installed GSMA-compliant operating system and pre-integrated connectivity capabilities. Supported by our partner Tata Communications, this eSIM offers global cellular network coverage (2G, 3G, 4G, CATM and other LTE services) spanning 640+ networks across 200 countries.

End-to-end connectivity management extending from design through manufacture to deployment reduces complexity, offers full visibility into IoT devices and simplifies control. It addresses today's key pain points in connectivity management, namely interoperability, technical support, cost, and coverage.



### Features

- > GSMA SGP.02 v3.2 compliance
- > Remote SIM provisioning enabled
- > Low power consumption
- > Compliant with 2G, 3G, 4G, LTE-M, NB-IoT
- > ETSI TS102 221 and ETSI TS102 671 compliance
- > MFF2 (QFN8) package (smaller packages on request)
- > Support for ISO7816- UART interface
- > Voltage classes A, B, C
- > Industrial grade (-40 to +105°C)
- > Data retention: 10 years
- > Common Criteria EAL5+ certified hardware

### Competitive advantage

- > Certified best-in-class Infineon security hardware with industrial grade (-40 ... +105°C).
- > Turnkey solution allowing fast & easy integration, deployment and management of IoT devices.
- > Pre-integrated connectivity providing global cellular network coverage (2G, 3G, 4G, CATM and other LTE services) over 640+ networks across 200 countries supported by our partner Tata Communications.
- > Connectivity data plan adjustable on application use cases and device geo-localization.

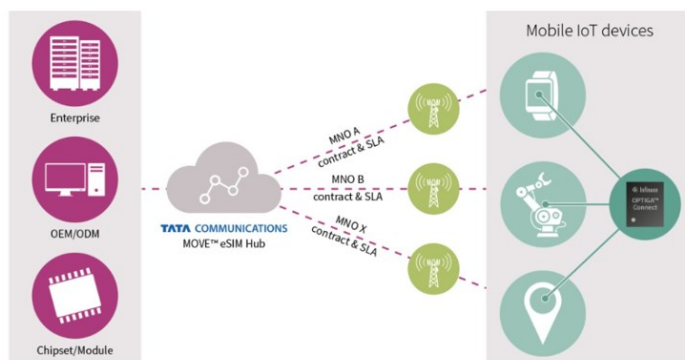
### Benefits

- > Pre-integrated set of best-of-breed technologies
- > Turnkey solution - ready to connect
- > Flexible connectivity service for cellular IoT devices
- > Global coverage
- > 1 SKU for all applications and regions
- > Easy deployment and management of cellular IoT at scale
- > Cost-effective, pervasive (worldwide) and secured connectivity
- > Simplified path to market
- > Reduced complexity through interoperability and connectivity management
- > GSMA RSP
- > Open for integration of additional applets
- > Low power consumption
- > Industrial grade

### Target applications

- > CAV Commercial Agricultural Vehicles
- > Cloud devices (IoT end nodes & edge gateways)
- > Industry automation (security cameras, factory automation, asset tracking)
- > Light Electric Vehicles
- > Smart Energy (metering, storage, distribution)
- > Smart Home (security, alarm, HVAC, access control)
- > Smart city infrastructure (security, lighting, parking sensors)
- > Wearables (health monitoring)

### System block diagram



### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">OC2321VQFN8XTMA1</a>	SP005420213	PG-VQFN-8

### Product collaterals / Online support

[Product page](#)

[Product brief](#)

EiceDRIVER™ SOI gate driver 1200 V 6ED2230S12T

The 6ED2230S12T is a 1200 V SOI driver IGBT with three independent high side and low side referenced output channels for three phase applications. It includes integrated high speed, low  $R_{ON}$  bootstrap diodes and a fast, high accuracy over-current protection comparator for low side, single leg shunt current sensing.

The output drivers feature a high-pulse current buffer stage designed for minimum driver cross-conduction. The floating channel can be used to drive N-channel power MOSFETs or IGBTs in the high side configuration. Propagation delays are matched to simplify the HVIC's use in high frequency applications, dead-time is built-in, with UVLO and shoot-through prevention protection.

SOI technology provides robust negative  $V_S$  transient voltage immunity and a unique DSO-24 package footprint simplifies PCB layout.



Features

- > 1200 V Offset voltage, SOI 3-phase gate driver
- > Integrated fast reverse recovery, low  $R_{ON}$  bootstrap diodes
- > Negative  $V_S$  transient voltage immunity of -100 V for repeating pulse widths up to 700 ns
- > Integrated fast, high accuracy over-current protection comparator with +/-5% accuracy reference threshold with less than 1  $\mu$ s output shutdown during OCP
- > 25 V  $V_{CC}$  maximum supply voltage supported
- > Integrated dead-time, UVLO, and shoot-through prevention logic
- > Single, three function pin for Enable, Fault, and programmable Fault clearing
- > 2 kV HBM ESD rating
- > Unique DSO-24 package for easy PCB layout

Benefits

- > Reduced BOM cost and PCB size for overall system level BOM cost reduction
- > Higher reliability and robustness due to superior negative  $V_S$  transient voltage immunity
- > Higher reliability and robustness with integrated OCP, UVLO, and shoot-through prevention logic

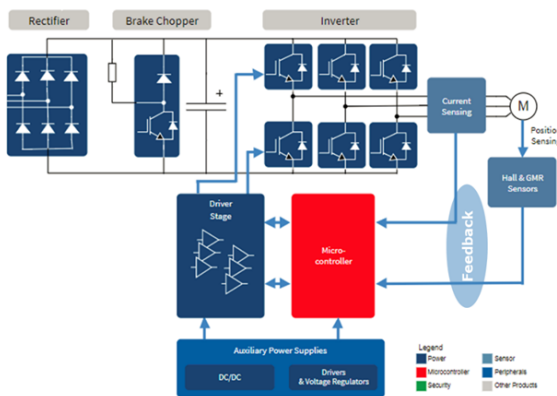
Target applications

- > Industrial drives
- > Embedded inverters
- > Commercial air-conditioning fans and compressors

Competitive advantage

- > Unique Infineon SOI technology
- > Integrated fast reverse recovery, low  $R_{ON}$  bootstrap diodes
- > Fast over-current protection with high accuracy +/-5% comparator reference threshold
- > Unique DSO-24 package with increased creepage / clearance and separated low and high voltage section for simpler and faster layout
- > 2kV HBM ESD compliant and 25 V  $V_{CC}$  support for higher power supply margin

Application diagram



Product overview incl. data sheet link

Product collaterals / Online support

[Product page](#)

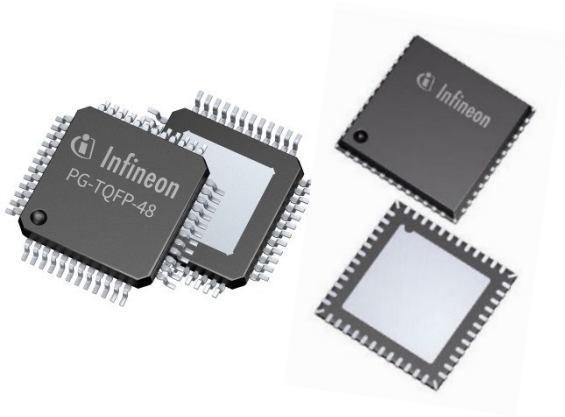
OPN	SP Number	Package
<a href="#">6ED2230S12TXUMA1</a>	SP001656578	PG-DSO-24
<a href="#">EVAL-M1-6ED2230-B1</a>	SP003235932	board

# LITIX™ Power Flex - Synchronous H-bridge DC-DC controller with SPI interface

The TLD5542-1 is a synchronous MOSFET H-Bridge DC-DC controller with built-in protection features and SPI interface. This concept is beneficial for driving high power LEDs with maximum system efficiency and minimum number of external components. The TLD5542-1 offers both, analog and digital (PWM) dimming.

The switching frequency is adjustable in the range of 200 kHz to 700 kHz. It can be synchronized to an external clock source. A built-in programmable Spread Spectrum switching frequency modulation and the forced continuous current regulation mode improve the overall EMC behavior. Furthermore, the current mode regulation scheme provides a stable regulation loop maintained by small external compensation components. The adjustable soft start feature limits the current peak as well as voltage overshoot at start-up.

The TLD5542-1 is suitable for use in harsh automotive environments.



### Features

- > Constant current & constant voltage regulation
- > High efficiency in every condition (up to 95%)
- > VIN range (4.5 V to 40 V – Vin Power 55 V)
- > Vout range (2 V up to 55 V)
- > EMC+: Spread Spectrum
- > LED current accuracy +/- 3%
- > Switching freq. (200 kHz to 700 kHz)
- > SPI for diagnostic/control
- > Limp Home function (Fail Safe)

### Competitive advantage

- > Most flexible Buck-Boost controller on the market
- > Dedicated feature-set to drive multiple LED loads with different voltages, dimming levels or currents on one device (fast output discharge and multichannel time sharing)

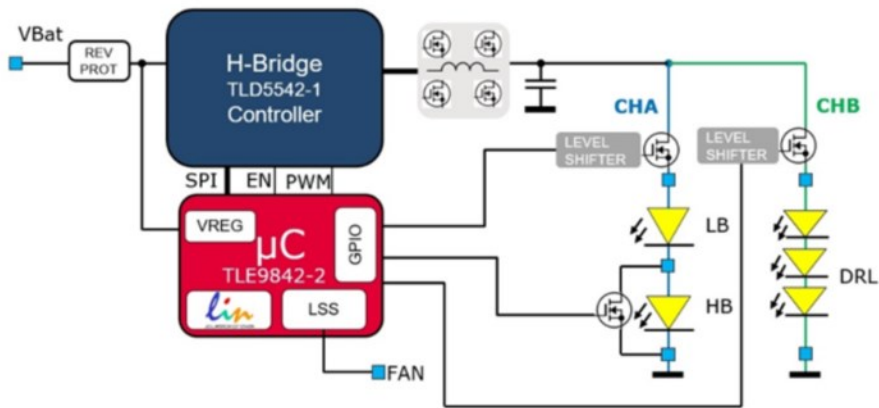
### Benefits

- > Buck-Boost controller enabling maximum efficiency in every condition (up to 96%)
- > Constant current & constant voltage regulation to enable a wide field of application fit
- > Improved Fast output discharge to drive combined LED loads
- > Also Multichannel Time sharing possible

### Target applications

- > LED Driver: high power and high efficiency
- > Front light LED driver: combined loads like high-beam/low-beam
- > Laser diode driver
- > Voltage regulators
- > Non-lighting functions like wireless charger

### Application diagram



### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">TLD55421QVXUMA1</a>	SP004441470	PG-VQFN-48

### Product collaterals / Online support

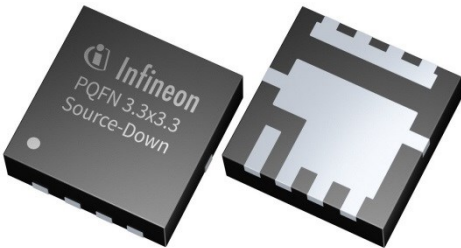
- [Product family page](#)
- [Product page](#)
- [Application note](#)



# OptiMOS™ power MOSFETs 40 V in PQFN 3.3x3.3

## Source-Down

The new IQE013N04LM6 and IQE013N04LM6CGATMA1 OptiMOS™ 40 V in PQFN 3.3x3.3 Source-Down are the first extension of Infineon’s innovative Source-Down portfolio. These MOSFETs offer superior thermal performance and optimized layout possibilities to support higher system



### Features

- > Major reduction in  $R_{DS(on)}$  up to 25 percent
- > Superior thermal performance in  $R_{thJC}$
- > Optimized layout possibilities
- > Standard and Center-Gate footprint

### Benefits

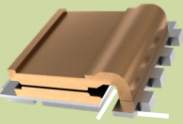
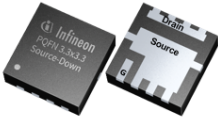

- > High current capability
- > More efficient use of PBC area
- > Highest power density and performance
- > Optimized footprint for MOSFET parallelization with Center-Gate

### Target applications

- > SMPS
- > Telecom
- > Server
- > Battery protection
- > Power tools
- > Charger

### Competitive advantage

- > Best-in-Class  $R_{DS(on)}$  in 3x3 package outline
- > Lower  $R_{thJC}$  leading to relaxed thermal design in the end application
- > Improved thermal management and form factor shrink
- > Flexible layout solutions

Package	Voltage Class	Target $R_{DS(on)}$ [mΩ]	Sales Name	Footprint
<b>PQFN 3.3 x 3.3</b> (internal construction shown) 	40 V	1.3	<b>IQE013N04LM6</b> (Standard Gate)	<b>Standard Gate</b> 
	40 V	1.3	<b>IQE013N04LM6CG</b> (Center-Gate)	<b>Center-Gate</b> 

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IQE013N04LM6ATMA1</a>	SP005340902	PG-TSON-8
<a href="#">IQE013N04LM6CGATMA1</a>	SP005340908	PG-TTFN-9

### Product collaterals / Online support

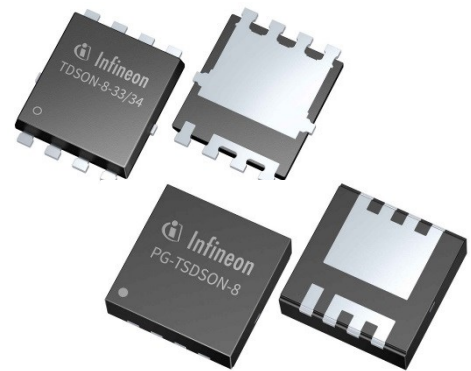
- [Product page](#)
- [Video](#)

## OptiMOS™5 60 V automotive MOSFETs

Infineon introduces its new 60 V OptiMOS™5 power MOS front end technology in two leadless packages, the 5x6 mm<sup>2</sup> SSO8 (PG-TDSON-8) and 3x3 mm<sup>2</sup> S3O8 (PG-TSDSON-8) with highest quality level and robustness for automotive applications.

The new 60 V technology OptiMOS™5 delivers more power and a leading performance. It offers reduced conduction losses and is optimized for drives and power conversion applications. Additionally, it provides an improved EMC behavior with the  $C_{iss}$  and  $C_{oss}$  being reduced by 70 percent, compared to the previous technology.

The new 60 V product family is suitable for several 12 V and 24 V automotive applications, especially DC/DC, LED lighting, Wireless charging and all CAV (Commercial, construction and Agricultural Vehicles with a 24 V board net) applications.



### Features

- > Optimized switching behavior
- > Copper clips for higher current loading
- > Lower package resistance and inductance
- > Small 5x6 mm<sup>2</sup> footprint of the leadless SSO8 package (PG-TDSON-8)
- > Small 3x3 mm<sup>2</sup> footprint of the leadless S3O8 package (PG-TSDSON-8)
- > Excellent thermal performance

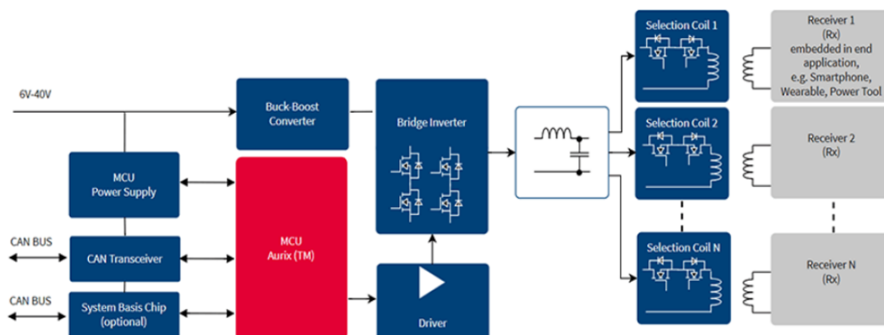
### Benefits

- > Current loading up to 120 A
- > Excellent thermal performance in compact form factor
- > Improved EMC behavior
- > Extended automotive qualification (beyond AEC-Q101)
- > Excellent thermal performance in compact form factor
- > Low gate charge and  $Q_{rr}$  for reduced switching losses
- > 20% higher current capability (SSO8 vs. DPAK)

### Target applications

- > Drives and power conversion applications.
- > DC-DC, ADAS, Wireless Charging, LED lighting, all CAV applications, Braking

### Application diagram



### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IAUC120N06S5N017ATMA1</a>	SP003244386	PG-TDSON-8
<a href="#">IAUC120N06S5L032ATMA1</a>	SP003244394	PG-TDSON-8
<a href="#">IAUC41N06S5L100ATMA1</a>	SP005409893	PG-TDSON-8
<a href="#">IAUZ40N06S5N050ATMA1</a>	SP003244398	PG-TSDSON-8
<a href="#">IAUZ30N06S5L140ATMA1</a>	SP003244402	PG-TSDSON-8

### Product collaterals / Online support

[Product family page](#)

[Product brief](#)

[Application note](#)

## TRENCHSTOP™ 5 AUTO in D<sup>2</sup>PAK with H5/F5 optimization

TRENCHSTOP™ 5 AUTO is an IGBT technology that enables world's lowest losses for switching in its class. The resulting high efficiency enables either an increased cruising range or a downsizing of the batteries for electric vehicles, or could simply provide better margin for low-complexity design-in activities. Overall, the great performance of TRENCHSTOP™ 5 AUTO offers a cost-optimized solution where engineers were used to use MOSFETs only. It is therefore perfectly suited for PFC stages in On-Board Chargers (OBCs).



### Features

- > 650 V break-through voltage
- > SMD package
- > Optional: co-packed with "Rapid" diode
- > Low COSS/EOSS
- > 300mm wafer production
- > Available from 15 A up to 50 A

### Target applications

- > On-Board Chargers
- > AC-DC Converter
- > PFC stages
- > e-Compressor

### Benefits

- > World-class switching performance
- > Best cost-down solution for fast-switching high-performance power devices
- > Lowest cost for PFC stages in OBCs vs MOSFET or SiC solutions
- > SMD package offers further reduced cost on system and manufacturing level with better quality control due

### Competitive advantage

World-class switching performance for fast-switching IGBTs in On-Board Chargers

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">AIGB15N65F5ATMA1</a>	SP001686064	PG-TO263-3
<a href="#">AIGB15N65H5ATMA1</a>	SP001686058	PG-TO263-3
<a href="#">AIGB30N65F5ATMA1</a>	SP001686052	PG-TO263-3
<a href="#">AIGB30N65H5ATMA1</a>	SP001686046	PG-TO263-3
<a href="#">AIGB40N65F5ATMA1</a>	SP001686042	PG-TO263-3
<a href="#">AIGB40N65H5ATMA1</a>	SP001686036	PG-TO263-3
<a href="#">AIGB50N65F5ATMA1</a>	SP001686030	PG-TO263-3
<a href="#">AIGB50N65H5ATMA1</a>	SP001686024	PG-TO263-3
<a href="#">AIKB15N65DF5ATMA1</a>	SP001686020	PG-TO263-3
<a href="#">AIKB15N65DH5ATMA1</a>	SP001686016	PG-TO263-3
<a href="#">AIKB30N65DF5ATMA1</a>	SP001612750	PG-TO263-3
<a href="#">AIKB30N65DH5ATMA1</a>	SP001612746	PG-TO263-3
<a href="#">AIKB40N65DF5ATMA1</a>	SP001686012	PG-TO263-3
<a href="#">AIKB40N65DH5ATMA1</a>	SP001686008	PG-TO263-3
<a href="#">AIKB50N65DF5ATMA1</a>	SP001686004	PG-TO263-3
<a href="#">AIKB50N65DH5ATMA1</a>	SP001686000	PG-TO263-3

### Product collaterals / Online support

[Product family page](#)

[Product brief](#)

**BSS126I - 600 V depletion mode N-Channel MOSFET**

Infineon is one of the few semiconductor manufacturers worldwide to offer depletion mode MOSFETs. Areas of application include power supply startup power, over-voltage protection, in-rush-current limiter, off-line voltage reference. With one single component, it is possible to design a simple current regulator.



**Features**

- > Broad product portfolio
- > dv/dt rated
- > Pb-free lead plating, RoHS compliant and halogen-free
- > Fully qualified according to JEDEC for industrial applications
- > Industry standard small outline package

**Benefits**

- > Competitive price/performance ratio
- > High system reliability
- > Environmentally friendly
- > Industry standard qualification level
- > PCB space and cost saving

**Target applications**

- > Start-up circuit in switch mode power supplies (SMPS)
- > Constant current linear LED application

**Product overview incl. data sheet link**

OPN	SP Number	Package
<a href="#">BSS126IXTSA1</a>	SP005425148	PG-SOT23-3

**Product collaterals / Online support**

- [Product page](#)
- [Product presentation](#)

## Traveo™ II 32-bit Automotive MCU based on ARM®



Thanks to its special features the Traveo™ II family is the perfect match for connected-car. With processing power and network connectivity built into a single Arm® Cortex® - M4F and dual Cortex® - M7F, the Traveo™ II family comes up with an enhanced performance up to 1500 DMIPS and a high-performance CPU operating up to 350 MHz.



### Features

- > HSM (Hardware security module)
- > eSHE (Enhanced Secure Hardware Extension)
- > Cortex®-M0+ for secure processing
- > Embedded flash in dual bank mode for FOTA requirements
- > Memory Protection Unit (MPU)

### Benefits

- > Configurable HSM domains
- > Scalability to 8MB Flash and Cortex-M7 dual core
- > Read While Write dual bank operations
- > Low standby current with quick resume operation

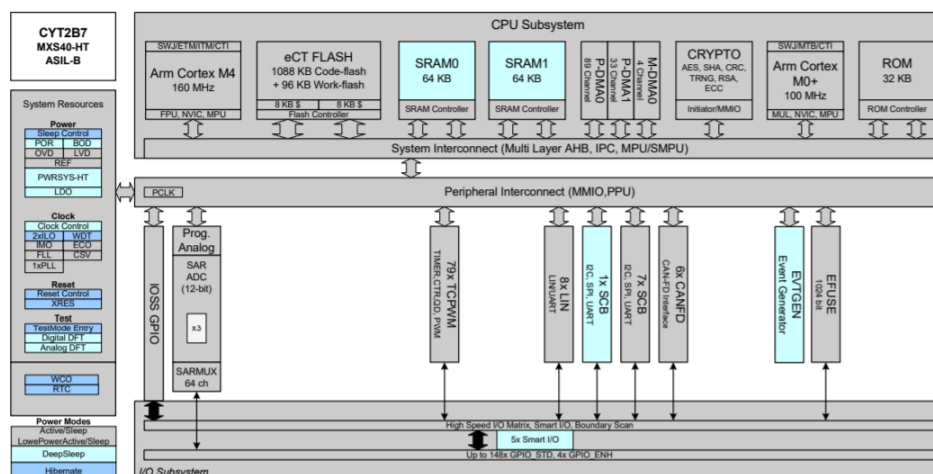
### Competitive advantage

- > Advantage on low power mode which fits perfectly to body applications

### Target applications

- > Body application
- > Infotainment
- > Lighting
- > Cluster

### Block diagram



### Product overview incl. data sheet link

OPN	Package
<a href="#">CYT2B75CADQ0AZECS</a>	LQFP-100
<a href="#">CYT2B78CADQ0AZECS</a>	LQFP-176
<a href="#">CYT2B95CACQ0AZECS</a>	LQFP-100
<a href="#">CYT2B98CACQ0AZECS</a>	LQFP-176

### Product collaterals / Online support

[Product Page Traveo™ II CYT2B9 Series](#)

[Product Page Traveo™ II CYT2B7 Series](#)



## PSoC® 4 32-bit Automotive MCU based on ARM®



The PSoC® 4 programmable system-on-chip architecture combines Cypress's best-in-class PSoC® analog and digital fabric and industry-leading CapSense® capacitive touch technology with Arm's power-efficient Cortex™-M0 core.



### Features

- > 48MHz Arm® Cortex®-M0 CPU
- > Up to 128KB Flash with Read Accelerator

### Low Power 1.71 to 5.5 V Operation

- > 20-nA Stop Mode with GPIO pin wakeup
- > Hibernate and Deep Sleep modes allow wakeup-time versus power trade-offs

### Target applications

- > Infotainment
- > Lighting
- > BS (Battery Management System)

### Competitive advantage

Low Power Mode

### Benefits

#### Timing and Pulse-Width Modulation:

- > Eight 16-bit timer/counter pulse-width modulator (TCPWM) blocks
- > Center-aligned, Edge, and Pseudo-random modes

#### Serial Communication:

- > Four independent run-time reconfigurable Serial Communication Blocks (SCBs) with re-configurable I2C, SPI, UART, or LIN Slave functionality
- > Two independent CAN 2.0B blocks

### Product overview incl. data sheet link

OPN	Package
<a href="#">CY8C4125PVS-482Z</a>	SSOP-28
<a href="#">CY8C4126AZS-M443</a>	TQFP-48
<a href="#">CY8C4127AZS-M485</a>	TQFP-64
<a href="#">CY8C4146PVE-S432</a>	SSOP-28
<a href="#">CY8C4146LQE-S433</a>	QFN-40
<a href="#">CY8C4147LQE-S473</a>	QFN-40
<a href="#">CY8C4147AZE-S475</a>	TQFP-64
<a href="#">CY8C4149AZA-S545</a>	TQFP-64
<a href="#">CY8C4149AZA-S598</a>	TQFP-100
<a href="#">CY8C4014SXS-421Z</a>	SOIC-16
<a href="#">CY8C4014LQE-422Z</a>	QFN-24
<a href="#">CY8C4045LQS-S411</a>	QFN-24
<a href="#">CY8C4045PVS-S412</a>	SSOP-28
<a href="#">CY8C4245PVA-482Z</a>	SSOP-28
<a href="#">CY8C4247AZA-M483</a>	TQFP-48
<a href="#">CY8C4247AZA-M485</a>	TQFP-64
<a href="#">CY8C4247LWA-M484</a>	QFN-56

### Product collaterals / Online support

[Product page PSoC® 4100/4200](#)

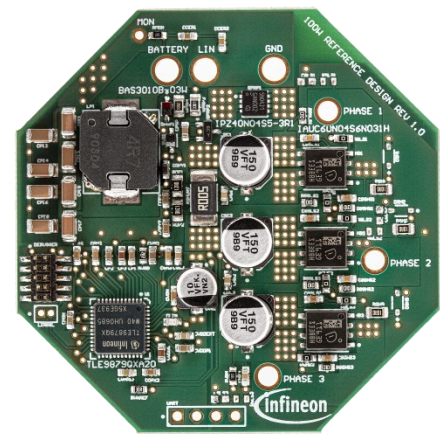
[Product Page PSoC® 4100S](#)

[Product Page PSoC® 4000](#)

REF\_WATERPUMP100W - Auxiliary water pump reference design with Embedded Power IC

The reference design targeting auxiliary water pump applications in the thermal management system provides an optimized layout to accelerate development. It is optimized in terms of thermal performance and EMC and provides a minimal BOM. The main components used in the reference design are:

- > **TLE9879QXW40:** This device is part of the Embedded Power IC family, a System-on-Chip for BLDC motor control applications.
- > **IAUC60N04S6N031H:** This is a 40 V MOSFET in 5x6 SSO8 package, using Infineon’s leading OptiMOS™ 6 technology.
- > **IPZ40N04S5-3R1:** This component is an OptiMOS™ 5 40 V in S3O8 package and it combines leading power MOSFET technology with 3.3 x 3.3 mm leadless power package.



Features

- > Up to 140 W power capability for 12V auxiliary water pump applications
- > Optimized BOM and PCB size (55x55 mm)
- > Optimized thermal behavior
- > SWD port for debug connection
- > Enables LIN communication
- > High-temperature FR4 PCB with 1oz, 4-layer copper
- > Single-side component mounting
- > Extensive documentation including
  - ⇒ reference design guide
  - ⇒ layout files
  - ⇒ schematics
  - ⇒ getting started guide
  - ⇒ EMC measurement report
  - ⇒ thermal analysis
  - ⇒ example software

Benefits

- > Reduced time to market
- > Minimal BOM and reduced PCB size
- > State-of-the-art components designed for long service life
- > Scalability of the device

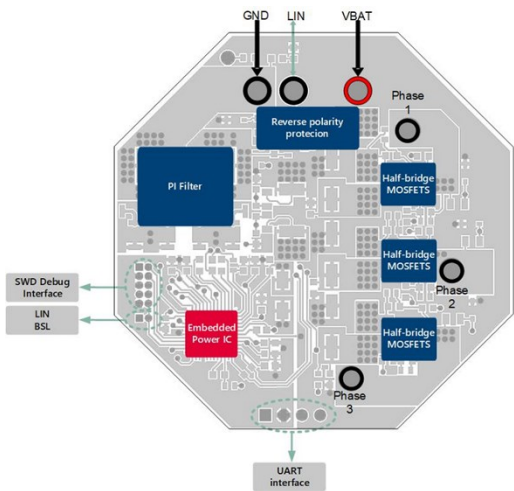
Target applications

- > 100 W BLDC motor for 12 V application, auxiliary water pump, oil pump

Competitive advantage

- > Optimized BOM and PCB size
- > Optimized thermal behavior
- > Extensive documentation (including design considerations, thermal analysis, EMC measurements and a detailed board description, example software)

Application diagram



Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">REFWATERPUMP100WTOB01</a>	SP005431284	board

Product collaterals / Online support

- [Product page](#)
- [Product brief](#)
- [User manual](#)

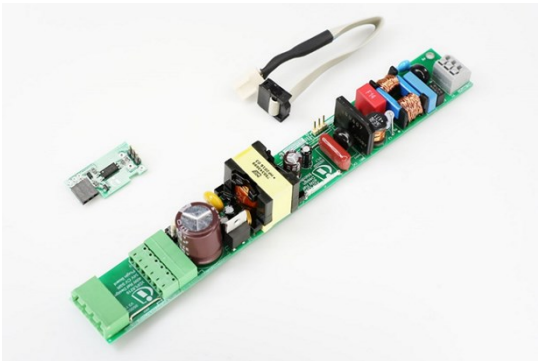
REF-XDPL8219-U40W reference design with IPD80R900P7

The XDPL8219 40W reference design is a digitally configurable front-stage HPF flyback converter with Secondary Side Regulated (SSR) Constant Voltage (CV) output of 54 V. An isolated UART reporting evaluation plug-in board is also included in the XDPL8219 40 W reference design packaging box. This plug-in board has an isolated uni-directional UART circuit, which can be evaluated optionally, by connecting it to the XDPL8219 40W reference design main board.

This reference design is featuring high power factor constant voltage flyback controller IC (XDPL8219) with secondary side feedback. It presents excellent power quality over wide load range. This design enables exchangeable feedback via pluggable extension boards:

- BCR601 based feedback board (optional)
- Standard feedback & ILDx150 boards (optional)

XDPL8218 has configurable output power limitation. The design provides configurable protection modes for failure during operation.



Features

- > Secondary Side Regulated (SSR) Constant Voltage (CV) output
- > High Power Factor (HPF) and low Total Harmonic Distortion (iTHD), across wide AC input voltage range (120Vrms to 277Vrms) and wide output load range (33 percent to 100 percent of full load)
- > High efficiency with Quasi-Resonant mode, switching in valley n (QRMn), across wide input and output load range
- > No load standby power, as low as < 100 mW with Active Burst Mode (ABM)
- > Reporting of system information, e.g. input voltage, line frequency, controller temperature, input voltage loss, and error code of last triggered protection, via uni-directional UART communication

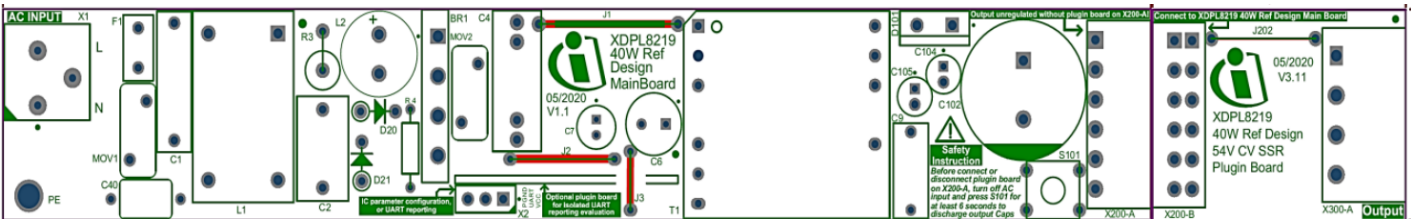
Benefits

- > Aid your design with advanced features of XDPL8219
- > Experience the good performance that meets stringent standards
- > Accelerate your design process with modular and parametrisations

Target applications

- > Lighting

PCB top layout of main board and 54 V CV SSR plug-in board



Product overview incl. data sheet link

Product collaterals / Online support

OPN	SP Number	Package
<a href="#">REFXDPL8219U40WTOBO1</a>	SP005430665	board

[Product page](#)  
[Application note](#)

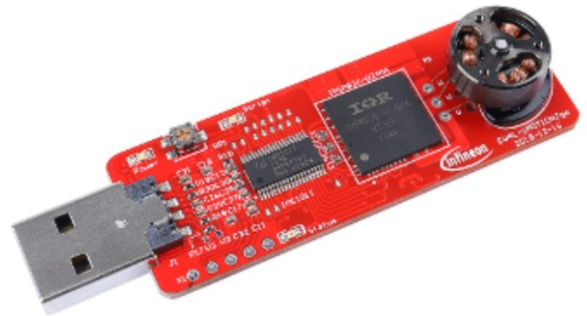
## iMOTION™ motor drive ICs starter kit for iMOTION™ design platform

EVAL-IMOTION2GO is a full motor-control system starter kit featuring IMC101T-T038 controller, an inverter IPM and a brushless direct current (BLDC) motor load. It provides a ready-to-use hardware setup for using the iMOTION™ design platform, MCEDesigner and MCEWizard.

The evaluation board measures 19x70 mm and is powered by a PCB USB output.

This kit is pre-programmed with the latest version of the iMOTION™ firmware and the script-based demo which is running the small motor mounted on the board. As soon as the kit is powered up through the USB slot, the demo will start and periodically vary the speed of the motor and alternate its rotating directions.

The MCEWizard and MCEDesigner PC development tools are required for configuring, controlling, tuning and monitoring.



### Features

- > Entire motor control system on a 19x70 mm PCB
- > Powered by PCB USB output
- > Algorithm integrated in IMC101T-T038 iMOTION™ motor controller
- > System parameters pre-configured for instantaneous start of the motor
- > Pre-loaded with script that runs the varying speed demo
- > Free software tools for system monitoring and tuning
- > On-board-debugger chip for communication and programming of IMC101T chip
- > Single-shunt sensor less FOC control
- > On-board debugger interface
- > BLDC motor mounted on the board

### Benefits

- > Easy and quick introduction to iMOTION™ system and tools
- > Free and user-friendly motor parametrization and tuning tools: MCE Wizard and MCEDesigner
- > Field-proven advanced motion control engine
- > No hardware setup needed
- > Fast time-to-market – No coding required for motor control functions
- > Safe operation based on 5 V USB power

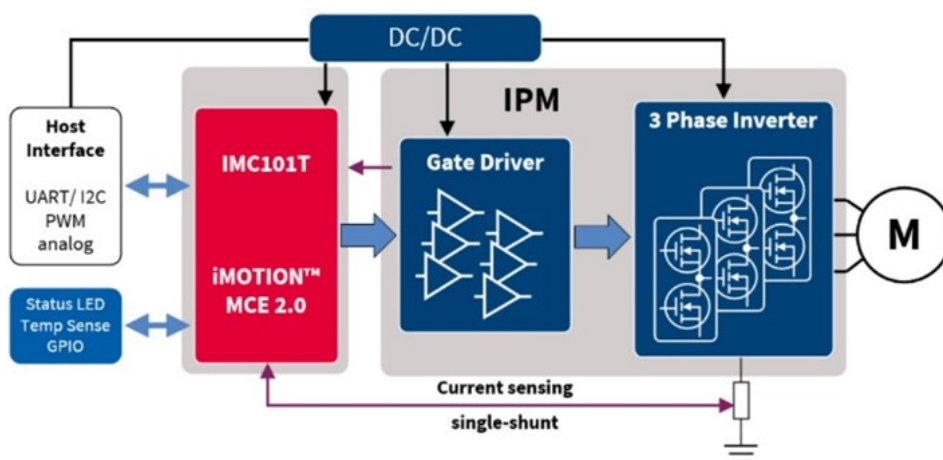
### Target applications

- > Home appliances
- > Industrial motor control and drives

### Competitive advantage

- > Get a motor running in under 1 hour with iMOTION™

### System diagram



### Product collaterals / Online support

- [Product page](#)
- [iMOTION™ MADK family page](#)
- [MCEWizard v2.3](#)
- [MCEDesigner v2.3](#)
- [iMOTION2Go software package](#)
- [Video](#)
- [Whitepaper](#)
- [User manual](#)

### Product overview incl. data sheet link

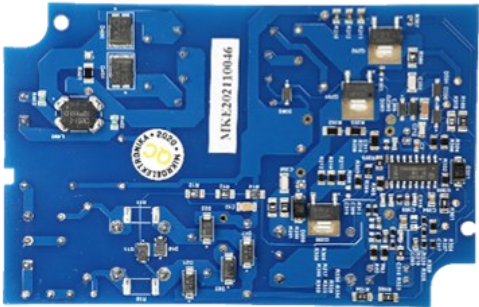
OPN	SP Number	Package
<a href="#">EVALIMOTION2GOTOBO1</a>	SP005409892	board

REF-ICL5102-U52W-CC

52W LED driver PFC+LCC evaluation board with ICL5102

The REF-ICL5102-U52W-CC demonstrates a low-cost PFC+LCC LED driver for non-dimmable indoor lighting applications, where the LED current can be switched among three fixed levels.

To reduce the system cost, the LCC is equipped with an open loop control and compact integrated LCC transformer. Thanks to a feed-forward mechanism, the LED current spread is narrow in this open loop control. The LCC is operated at high frequency so that the series inductance of the LCC topology can be integrated into the transformer. Both integrated LCC transformer and open-loop design result in a low system cost.



Features

- > Low cost PFC+LCC topology for non-dimmable LED lighting where high light quality is required
- > Open-loop LCC design with narrow LED current spread
- > Integrated LCC transformer
- > Feedforward to constrain the LED current spread in the open-loop design
- > High frequency LCC
- > Components on the board:
  - > High performance PFC + resonant controller for LCC and LLC (ICL5102)
  - > CoolMOS™ P7 superjunction MOSFET (IPN60R600P7S)

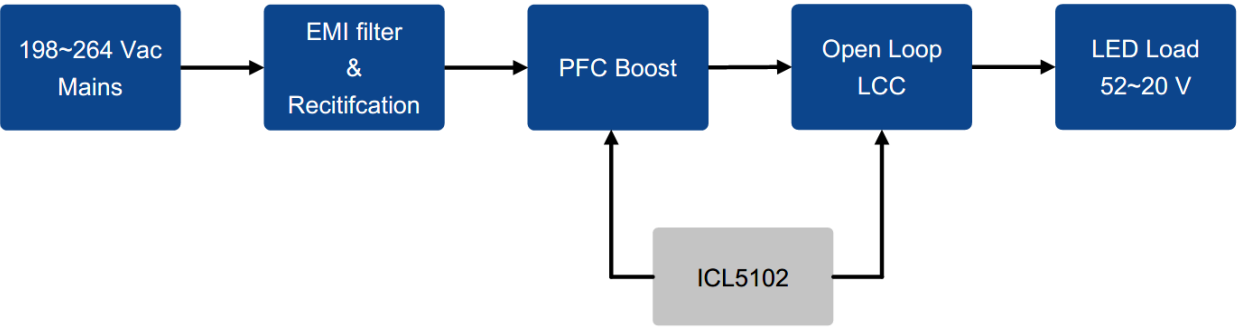
Benefits

- > Low cost, high efficiency
- > Superior THD
- > Compact LCC magnetics
- > Narrow LED current spread in the open loop design
- > High frequency LCC

Target applications

- > Lighting

System diagram



Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">REFICL5102U52WCCTOBO1</a>	SP005419724	board

Product collaterals / Online support

- [Product page](#)
- [Application note](#)



EVAL\_3KW\_DB\_PFC\_C7\_2

3kW 90kHz PFC converter evaluation board

This evaluation board shows how to design a high power density 3kW 90kHz bridgeless dual-boost power factor correction (PFC) converter, working in continuous conduction mode (CCM).

For this purpose, the following devices have been used: 650V CoolMOS™ C7 superjunction MOSFETs (IPZ65R045C7 and IPW65R045C7), CoolSiC™ Schottky diode 650V G5 (IDH06G65C5), EiceDRIVER™ 1EDI isolated gate driver IC (1EDI60N12AF) and EiceDRIVER™ 2EDN non-isolated gate driver IC (2EDN7524F), XMC1300 microcontroller (XMC1302-T038X0200 AB), linear voltage regulator (TLF4949EJ) and quasi-resonant CoolSET™ (ICE2QR4780Z).



Features

- > Best-in-class high\_ voltage MOSFETs for a bridgeless PFC topology
- > Full digital control
- > High-voltage MOSFET as AC line active rectification

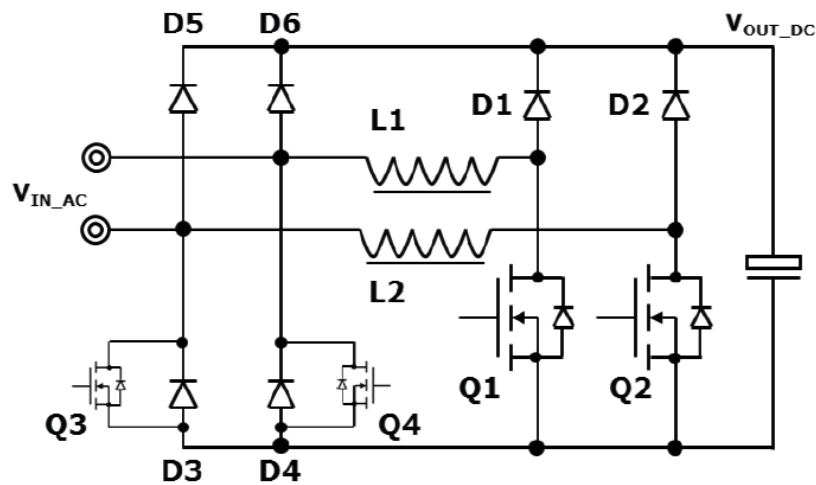
Benefits

- > >98% efficiency from 10% of the load at high line
- > High power density
- > Evaluation of best-in-class devices in TO-247 4-pin package

Target applications

- > Charger
- > E-mobility
- > Industrial drives
- > Industrial power
- > Power supplies
- > Robotics

System diagram: Bridgeless dual-boost PFC converter



Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">EVAL3KWDBPFCC72TOBO1</a>	SP005425952	board

Product collaterals / Online support

- [Product page](#)
- [Application note](#)