New Product Introduction

August 2021

Thyristor prime discs for UPS up to 2.4 MVA

EconoPIM™ and EconoPACK™ 2 and 3 IGBT modules with TRENCHSTOP™ IGBT7

650 V TRENCHSTOP™ 5 WR6 in TO-247-3-HCC package

1200 V TRENCHSTOP™ IGBT7 S7 in TO247-3pin

OptiMOS™ PD- low voltage MOSFETs

Reference design - REF_ICL8800_LED_43W

Reference design - REF_ICL8810_LED_43W_BM

Reference design - REF_ICL8820_LED_43W_JT

Reference design - REF_ICL8810_LED_42W_PSR

Evaluation board - EVAL_3K3W_TP_PFC_CC

Evaluation board - EVAL-1ED3890MX12M

Evaluation board - EVAL-1ED38x0DCT

Evaluation board - EVAL-2ED2101-HB-LLC

Thyristor prime discs for UPS up to 2.4 MVA

Infineon offers a complete thyristor module and disc portfolio for UPS bypasses and STS (Static Transfer Switches). It is also available as pre-assembled cooling blocks or fully integrated stack solutions. Using single 111 mm thyristor disc and forced air cooling, the existing limit is 2.0 MVA @480 V.

New requirements for data centers push the limits further for more power density and compact design.

Features

- Full blocking capability 50/60 Hz over full temperature range
- High DC blocking stability
- High surge current capability
- Maximum junction temperature 135°C

Benefits

- Minimized maintenance and reduced downtime due to high reliability
- Easy System power scaling by special designs for parallel connection
- Fuseless design possible due to short-on-fail
- Highest current capability in the market

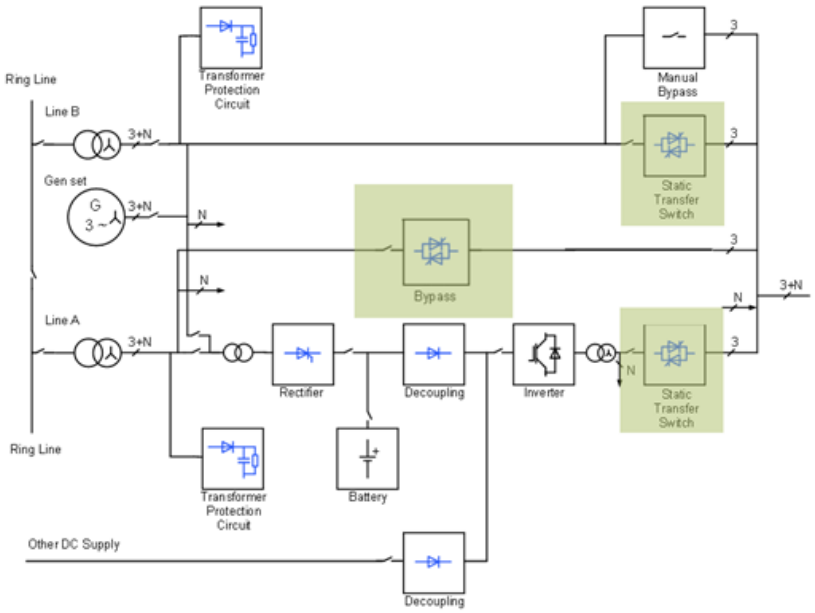
Target applications

- UPS bypass
- UPS static transfer switch
- Low voltage softstarter
- Low voltage drives

Competitive advantage

- Broadest thyristor portfolio for UPS bypasses up to 2.4 MVA
- Highest continuous current in each footprint
- Highest max. junction temperature
- Benefit from higher power density and integrated solutions

System diagram



Product overview incl. data sheet link

OPN	SP Number	Package
T1900N16TOFVTXPSA1	SP005567468	BG-T7526K-1
T1900N18TOFVTXPSA1	SP005567465	BG-T7526K-1
T2600N16TOFVTXPSA1	SP005567462	BG-T10035-1
T2600N18TOFVTXPSA1	SP005570864	BG-T10026K-1
T3800N16TOFVTXPSA1	SP005567349	BG-T11126K-1
T3800N18TOFVTXPSA1	SP005567352	BG-T11126K-1

Product collaterals / Online support

Product family page

Application note

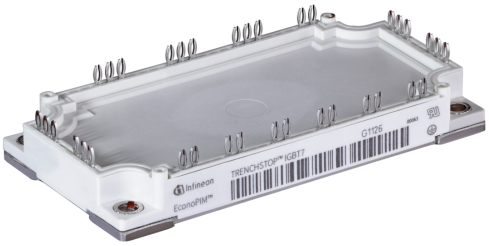
Tech article

EconoPIM™ and EconoPACK™ 2 and 3 IGBT modules with TRENCHSTOP™ IGBT7

The EconoPIM™ and EconoPACK™ 2 and 3 IGBT modules now feature the latest TRENCHSTOP™ IGBT7 chip generation. The modules can reach up to 175°C T_{vjop} under overload conditions, making them a perfect fit for industrial drives applications.

Compared to IGBT4, the IGBT7 has a higher power density, an increased switching frequency, the cooling effort can be reduced. All in all, there is the same or better lifetime while keeping the operating conditions unchanged.

The portfolio covers 35 - 200 A in the 1200 V PIM configuration and the FS150R12N2T7, which is a 150 A module in 1200 V sixpack configuration. This particular module can reach up to 37 kW in heavy duty.



Features

- 1200 V, 35 – 200 A
- Econo 2 and 3 housing
- PIM and sixpack topology
- Latest TRENCHSTOP™ IGBT7 chip generation

Benefits

- V_{CEsat} is reduced by 20% compared to IGBT4 while keeping the turn-off losses at the same level
- Optimized for drives applications T_{vjop} under overload up to 175°C
- High power density e.g. FS150R12N2T7 can reach up to 37 kW and FP200R12N3T7 up to 45 kW in heavy duty

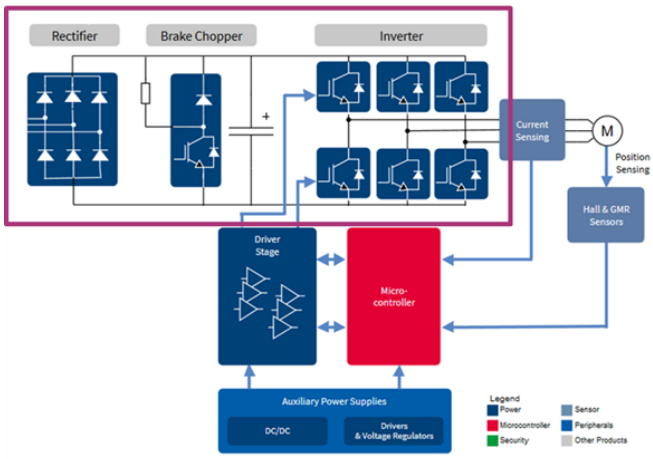
Target applications

- Industrial drives

Competitive advantage

- EconoPIM™ 2 and 3 have the broadest portfolio and highest power density for IGBT7 with 100 A for EconoPIM™ 2 and 200 A for EconoPIM™ 3.
- Highest power density for EconoPACK™ 2 with 150 A.

Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
FP100R12N2T7BPSA1	SP005345908	AG-ECONO2-4
FP150R12N3T7BPSA1	SP004145204	AG-ECONO3-3
FP200R12N3T7BPSA1	SP005337548	AG-ECONO3-3
FS150R12N2T7BPSA1	SP005341942	AG-ECONO2-6
FP35R12N2T7BPSA1	SP004145210	AG-ECONO2B-711
FP35R12N2T7B11BPSA1	SP005434969	AG-ECONO2B-711
FP50R12N2T7BPSA1	SP003086580	AG-ECONO2B-711
FP50R12N2T7B11BPSA1	SP005434966	AG-ECONO2B-711
FP75R12N2T7BPSA1	SP004145216	AG-ECONO2B-711
FP75R12N2T7B11BPSA1	SP005434982	AG-ECONO2B-711

Product collaterals / Online support

Product family page, EconoPIM™ 2 & 3

Product family page, EconoPACK™ 2 & 3

Product family page, IGBT7 Modules

Application note

650 V TRENCHSTOP™ 5 WR6 in TO-247-3-HCC package

The TRENCHSTOP™ 5 WR6 family in the new TO-247-3-HCC brings improved reliability against package contamination.

The TRENCHSTOP™ 5 WR6 family of discrete devices are optimized for Residential, Commercial Aircon PFC, and Welding applications. It offers lowest losses, lowest E_{sw}, and enables more reliable system design with the new increased creepage and clearance distances.

Features

- Lowest V_{CESAT} 1.45 V at 25°C
- Monolithically integrated diode
- Lowest E_{sw}
- High creepage & clearance package

Benefits

- Improved price-performance ratio
- Optimized diode for PFC and welding applications
- Lowest switching losses
- Improved reliability against package contamination

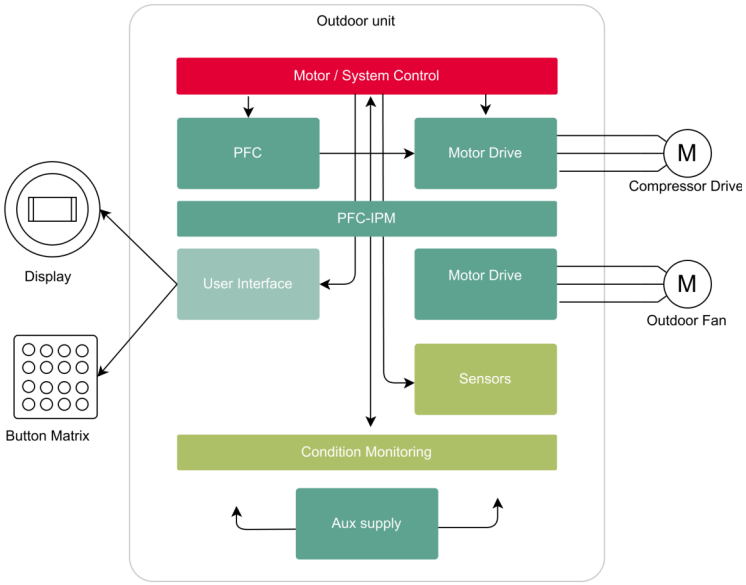
Target applications

- RAC / CAC PFC
- Welding applications

Competitive advantage

- Outstanding price/performance ratio

System diagram



Product overview incl. data sheet link

OPN	SP Number	Package
IKWH20N65WR6XKSA1	SP005545963	PG-TO247-3
IKWH30N65WR5XKSA1	SP005430891	PG-TO247-3
IKWH30N65WR6XKSA1	SP005430886	PG-TO247-3
IKWH40N65WR6XKSA1	SP005542785	PG-TO247-3
IKWH50N65WR6XKSA1	SP005542787	PG-TO247-3
IKWH60N65WR6XKSA1	SP005430894	PG-TO247-3
IKWH70N65WR6XKSA1	SP005430896	PG-TO247-3

Product collaterals / Online support

Product family page

1200 V TRENCHSTOP™ IGBT7 S7 in TO247-3pin

Infineon 1200 V TRENCHSTOP™ IGBT7 S7 portfolio with its co-packed full rated, very soft diode offers reduced $V_{CE(sat)}$, and improved controllability delivering/providing the best thermal performance among SC device and increased robustness thanks HV-H3TRB and cosmic ray ruggedness

The 1200 V IGBT7 S7 discrete portfolio, released in 6 current classes - 8 A, 15A, 25 A 40 A, and 50 A, specifically designed hard switching application, such as industrial motor drives, industrial power supplies, and solar inverters requiring short circuit capability

Features

- IGBT co-packed with full current, soft, and Io Q_{rr} diode
- Low saturation voltage $V_{CE(sat)}$ = 2.0 V at T_{vj} = 175°C
- Optimized for hard switching topologies (2 level inverter, 3L NPC T type)
- Short circuit ruggedness 8µsec
- Portfolio of 8 A, 15 A, 25 A 40 A and 50 A devices
- Wide range of dv/dt controllability
- HV-H3TRB and improved cosmic ray ruggedness
- Higher pulse current 3xIcnom capability
- Easy for paralleling
- Higher power density
- 1200 V blocking voltage
- TO247 3pin package

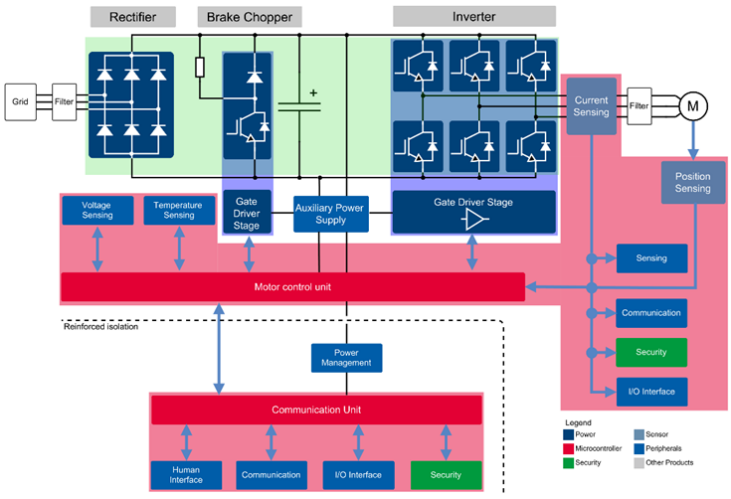
Benefits

- Optimized performance in application conditions
- Low conduction losses
- Low switching losses
- Improved reliability
- Easy EMI design

Target applications

- Industrial drivers
- Industrial power supplies
- Solar inverters

System diagram



Competitive advantage

- 1200 V TRENCHSTOP™ IGBT7 S7 portfolio offers the perfect fit in term of performance - lower total losses, higher power density, controllability, and robustness - for all hard switching application requiring increased robustness – short circuit, HV-H3TRB, and enhanced cosmic-ray ruggedness – against harsh condition

Product overview incl. data sheet link

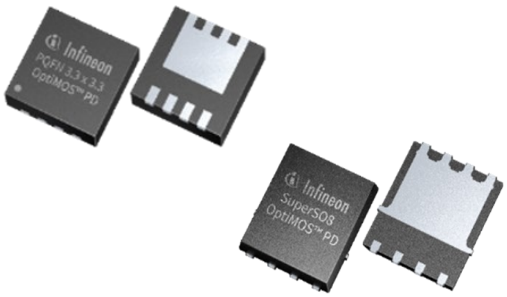
OPN	SP Number	Package
IKW08N120CS7XKSA1	SP005419704	TO-247 3pin
IKW15N120CS7XKSA1	SP005419706	TO-247 3pin
IKW25N120CS7XKSA1	SP005419560	TO-247 3pin
IKW40N120CS7XKSA1	SP005415716	TO-247 3pin
IKW50N120CS7XKSA1	SP005419710	TO-247 3pin

Product collaterals / Online support

Product family page

OptiMOS™ PD - low voltage MOSFETs

The new generation OptiMOS™ PD is Infineon's MOSFET portfolio representing the best fit for USB-PD and fast charger designs, supporting short lead times as well as fast quote response times.



Features

- Logic level availability
- Low on-state resistance $R_{DS(on)}$
- Low gate, output and reverse recovery charge
- Excellent thermal behavior
- Available in 2 small standard packages

Benefits

- Short lead times
- Quick quote response
- Highest efficiency and power density designs
- Compact, lightweight and environmentally friendly products
- Excellent price-performance ratio

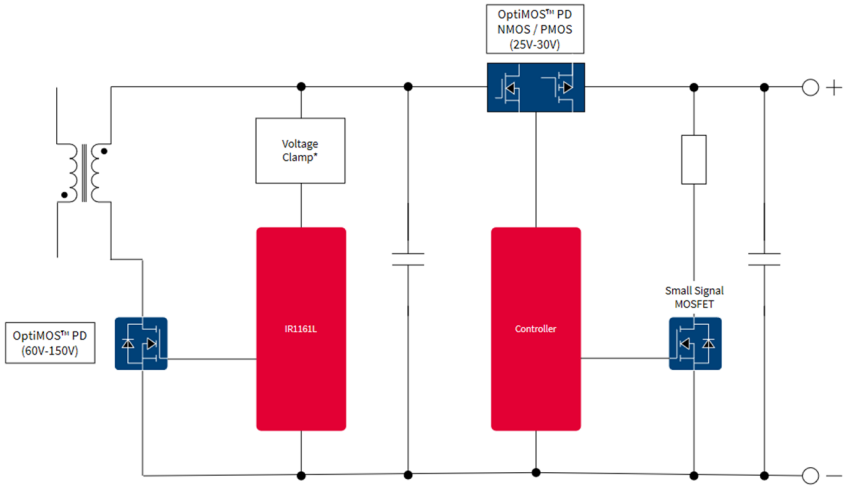
Target applications

- USB PD charger
- Adapter

Competitive advantage

- Optimized products: low gate charge and switching losses
- Excellent price/performance ratio
- Short lead time
- Quick quote response

Block diagram



Product overview incl. datasheet link

OPN	SP Number	Package
ISC0602NLSATMA1	SP005430396	PG-TDSON-8
ISC0603NLSATMA1	SP005430400	PG-TDSON-8
ISZ0602NLSATMA1	SP005430392	PG-TSDSON-8
ISC0702NLSATMA	SP005417416	PG-TDSON-8
ISC0703NLSATMA1	SP005417423	PG-TDSON-8
ISZ0702NLSATMA1	SP005417427	PG-TSDSON-8
ISZ0703NLSATMA1	SP005417432	PG-TSDSON-8
ISC0802NLSATMA1	SP005430372	PG-TDSON-8
ISC0806NLSATMA1	SP005430384	PG-TDSON-8
ISC0805NLSATMA1	SP005430376	PG-TDSON-8
ISC0804NLSATMA1	SP005430380	PG-TDSON-8
ISC0803NLSATMA1	SP005430489	PG-TDSON-8
ISZ0804NLSATMA1	SP005430388	PG-TSDSON-8
ISZ0803NLSATMA1	SP005430493	PG-TSDSON-8

Product collaterals / Online support

Product family page

Product brief

Reference design - REF_ICL8800_LED_43W

The REF_ICL8800_LED_43W is a 43W reference design featuring Infineon's high power factor flyback controller ICL8800. The board is a constant voltage (CV) secondary-side regulated (SSR) system and is intended to be used with a constant current (CC) converter for LED lighting applications.

Two-stage topologies are growing because of the convenient scalability of power on the primary side and the features on the secondary side. REF_ICL8800_LED_43W is designed as plug-and-play solution and can be combined with secondary-side DC/DC boards.

As a default setup, the reference design board is assembled with a start-up circuit based on a depletion-mode MOSFET BSS126I on a very small adapter board. This setup offers the lowest standby losses. If low standby consumption is not necessary, the start-up circuit can be changed to a resistive start-up.

This reference design is provided with two regulation circuits. Both circuits are designed as plug-and-play solutions, but at least one has to be connected to the main board.

The two boards shall show the trade-off between cost; here the TL431 board offers a low-cost solution, and standby performance, while the op-amp board shows an overall 30mW better performance.

Features

- Constant voltage (CV) secondary-side regulated (SSR) reference design for LED lighting applications
- Power factor (PF) > 0.9 and THD < 10% across a wide load range (AC input up to 277 V_{rms})
- Maximum AC input voltage 90 – 305 V_{rms}
- Critical conduction mode and quasi-resonant mode with smart valley hopping

Benefits

- Best fit topology for on/off LED driver with minimum dimming levels down to 5%
- Two-stage topology combines scalability with numerous features
- High light quality
- Cost-effective and bottom-up design
- Flexibility and low BOM for many applications

Target applications

- LED lighting
- Dimmable LED driver including dim-to-off
- LED driver and luminaires up to 125 W
- Adapter and charger, flat TV, all-in-one PC, monitors up to 125 W

Product collaterals / Online support

Product page

Application note

Product overview incl. user manual link

OPN	SP Number	Package
REFICL8800LED43WTOBO1	SP005569139	board

Reference design - REF_ICL8810_LED_43W_BM

The REF_ICL8810_LED_43W_BM is a 43W reference design featuring Infineon's high power factor flyback controller ICL8810. The board is a constant voltage (CV) secondary-side regulated (SSR) system and is intended to be used with a constant current (CC) converter for LED lighting applications.

Two-stage topologies are growing because of the convenient scalability of power on the primary side as and the features on the secondary side. REF_ICL8810_LED_43W_BM is designed as plug-and- play solution and can be combined with secondary side DC/DC boards.

As a default setup, the reference design board is assembled with a start -up circuit based on a depletion-mode MOSFET BSS126I on a very small adapter board. This setup offers the lowest standby losses. If low standby consumption is not necessary, the start-up circuit can be changed to a resistive start-up.

This reference design is provided with two regulation circuits. Both circuits are designed as plug and play solutions, but at least one has to be connected to the main board.

The two boards shall show the trade-off between cost; here the TL431 board offers a low-cost solution, and standby performance, while the op-amp board shows an overall 30mW better performance.

Features

- Constant voltage (CV) secondary side regulated (SSR) reference design for LED lighting applications
- ICL8810 provides integrated burst mode for very low stand-by power < 100 mW
- Power factor (PF) > 0.9 and THD < 10% across a wide load range (AC input up to 277 V_{rms})
- Maximum AC input voltage 90 – 305 V_{rms}
- Critical conduction mode and quasi-resonant mode with smart valley hopping

Benefits

- Best fit topology for LED driver with minimum dimming levels down to 0.1% and dim-to-off
- Enables smart lighting
- Two-stage topology combines scalability with numerous features
- High light quality
- Cost-effective and bottom-up design
- Flexibility and low BOM for many applications
- Two-stage topology combines scalability with numerous features
- High light quality
- Cost-effective and bottom-up design
- Flexibility and low BOM for many applications

Target applications

- LED lighting
- Smart lighting
- LED driver and luminaires up to 125 W
- Adapter and charger, flat TV, all-in-one PC, monitors up to 125 W

Product collaterals / Online support

Product page

Application note

Product overview incl. user manual link

OPN	SP Number	Package
REFICL8810LED43WBMTOBO1	SP005569140	board

Reference design - REF_ICL8820_LED_43W_JT

The REF_ICL8820_LED_43W_JT is a 43W reference design featuring Infineon's flyback controller ICL8820. The board is a constant voltage (CV) secondary-side regulated (SSR) system and is intended to be used with a constant current (CC) converter for LED lighting applications.

Two-stage topologies are growing because of the convenient scalability of power on the primary side as well as of the features on the secondary side. REF_ICL8820_LED_43W_JT is designed as plug- and -play solution.

As a default setup, the reference design board is assembled with a start-up circuit based on a depletion-mode MOSFET BSS126I on a very small adapter board. This setup offers the lowest standby losses. If low standby consumption is not necessary as an option, the start-up circut can be changed to a resistive start-up.

This reference design is provided with two regulation circuits. Both circuits are designed as plug and play solutions, but at least one has to be connected to the main board.

The two boards shall show the trade-off between cost; here the TL431 board offers a low-cost solution, and standby performance, while the op-amp board shows an overall 30mW better performance.

Features

- Constant voltage (CV) secondary-side regulated (SSR) reference design for LED lighting applications
- ICL8820 provides integrated burst mode for very low stand-by power < 100 mW and built-in jitter function for easy EMI certification without additional circuitry
- Power factor (PF) > 0.9 and THD < 10% across a wide load range (AC input up to 277 V_{rms})
- Maximum AC input voltage 90 – 305 V_{rms}
- Critical conduction mode and quasi-resonant mode with smart valley hopping

Benefits

- Best-fit topology for smart LED drivers with minimum dimming levels down to 0.1% and dim-to-off
- Enables smart lighting and emergency lighting
- Two-stage topology combines scalability with numerous features
- High light quality
- Cost effective and bottom-up design
- Flexibility and low BOM for many applications

Target applications

- LED lighting
- LED driver and luminaires up to 125 W
- Smart lighting
- Emergency Lightning
- Adapter and charger, flat TV, all-in-one PC, monitors up to 125 W

Product collaterals / Online support

Product page

Application note

Product overview incl. user manual link

OPN	SP Number	Package
REFICL8820LED43WJTTOBO1	SP005569141	board

Reference design - REF_ICL8810_LED_42W_PSR

The REF_ICL8810_LED_42W_PSR is a 42W reference design featuring Infineon's high power factor flyback controller ICL8810. The board is a constant voltage (CV) primary-side regulated (PSR) system and is intended to be used with a constant current (CC) converter for LED lighting applications.

Compared to SSR, PSR shows significant cost advantages. Components, such as an optocoupler, a voltage reference, and an error amplifier are no longer needed. Thus, REF_ICL8810_LED_42W_PSR is the perfect, cost-optimized solution for on/off LED drivers or LED drivers with minimum dimming levels down to 5 percent.

The board has excellent accuracy of ±3.5% in the range of 10% to 100% of the output power.

With its benchmarking performance in power factor correction and total harmonic distortion at full-load and low-load conditions, ICL8810 enables window drivers and platform designs. Furthermore, the IC combines optimum efficiency and low EMI without compromising light quality.

Features

- Constant voltage (CV) primary-side regulated (PSR) reference design for LED lighting applications
- ICL8810 provides integrated burst mode for very low stand-by power < 100 mW
- Power factor (PF) > 0.9 and THD < 10% across a wide load range (AC input up to 277 V_{rms})
- Maximum AC input voltage 90 – 305 V_{rms}
- Critical conduction mode and quasi-resonant mode with smart valley hopping

Benefits

- Best fit and solution for on/off LED drivers or LED drivers with minimum dimming levels down to 5%
- Cost optimized
- Excellent accuracy of ±3.5% in the range of 10% to 100% of the output power
- Enables smart lighting

Target applications

- LED lighting
- Smart lighting
- LED driver and luminaires up to 125 W
- Adapter and charger, flat TV, all-in-one PC, monitors up to 125 W

Product collaterals / Online support

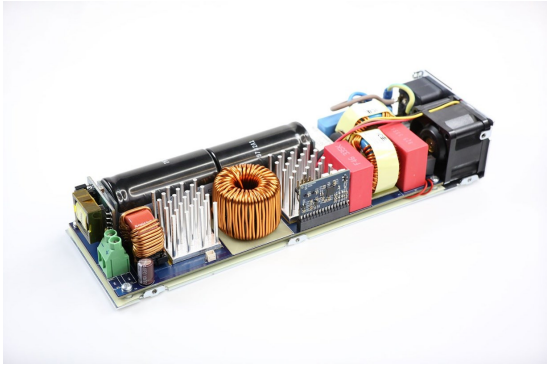
Product page

Application note

Product overview incl. user manual link

OPN	SP Number	Package
REFICL8810LED42WPSRTOBO1	SP005574081	board

Evaluation board - EVAL_3K3W_TP_PFC_CC



This evaluation board is a system solution for a bridgeless totem-pole power factor corrector (PFC) in continuous conduction mode (CCM) implemented with 600 V CoolMOS™ CFD7. The EVAL_3K3W_TP_PFC_CC is enabled by Infineon's CoolMOS™ superjunction power MOSFETs as well as isolated drivers and XMC™ microcontroller.

This bridgeless totem-pole PFC board is intended for applications that require high efficiency (≈99 %) and high power density (92 W/in³) such as high-end servers and telecom. The totem-pole implemented in EVAL_3K3W_TP_PFC_CC board operates in continuous conduction mode (CCM) at 65 kHz with CoolMOS™ superjunction MOSFETS and digital control on Infineon XMC™ 1000 series microcontroller.

Features

- High efficiency bridgeless totem pole PFC
- High power density with SMD devices
- Enabled by 600 V CoolMOS™ CFD7
- Hard commutation with CoolMOS™ CFD7 at fsw
- Digitally controlled with XMC1402

Benefits

- Efficiency close to 99 %
- Best in class price-performance ratio
- Compact form factor (92 W/in³)
- Low component count

Target applications

- Telecom SMPS
- Server
- Industrial power

Product collaterals / Online support

Product page

Application note

Product overview incl. user manual link

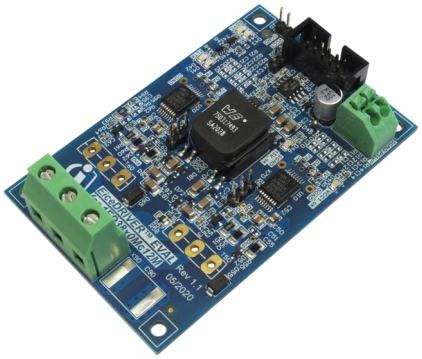
OPN	SP Number	Package
EVAL3K3WTPPFCCCTOBO1	SP005577212	board

Evaluation board - EVAL-1ED3890MX12M

EVAL-1ED3890MX12M is in half-bridge configuration with two gate driver ICs (1ED3890MX12M) to drive power switches such as Si MOSFETs, IGBTs and SiC MOSFETs. The switch type can be freely chosen.

The board has a size of 85 x 85 x 15 mm without any power switch assembled. It is best suited to leverage the highly configurable X3 Digital (1ED38xx) family with its reach feature-set. Configuration is performed via I2C bus.

The evaluation board is recommended to be used with a companion microcontroller evaluation board EVAL-1ED38x0DCT to optimize the configuration process.



Features

- I2C bus for parameter adjustment, state and fault feedback, ADC measurements and condition monitoring
- Two precise VCE(sat) detection (DESAT2) circuit with fault output, adjustable leading edge blanking time and individually adjustable trigger voltages, filter times
- Two-level turn-off (TLTO) with adjustable slopes, plateau time and plateau level
- Adjustable hardware UVLO with hysteresis for IGBTs and MOSFETs on both VCC2 and VEE2 rails with active shutdown
- ADC measurement of internal parameters: supply voltages and internal temperature
- 40 V absolute maximum output supply voltage
- ± 9 A typical sourcing and sinking gate current capability
- High common-mode transient immunity CMTI = 200 kV/µs
- Small space-saving DSO-16 fine-pitch package with large creepage distance (>8 mm)
- Gate driver safety certification:
- UL 1577 recognized (planned) with V¬ISO,test = 6840 V(rms) for 1 s, V¬ISO = 5700 V(rms) for 60 s
- IEC 60747-17/VDE 0884-11 approval (planned) with V¬IORM = 1.4 kV (peak, reinforced)"

Benefits

- Enables fast design cycles due to low external component count and still offers adjustable DESAT with Soft-off functionality
- Best-in-class DESAT accuracy: perfect for all applications requiring reliable short-circuit protection (including SiC MOSFET and IGBT7)
- Enables predictive maintenance and rapid prototyping
- The precise threshold and timings, combined with UL 1577 and VDE 0884-11 certification enable superior application safety
- Perfect fit for all applications requiring a reliable DESAT protection, benefit from an active Miller clamp and prefer small PCB space requirements"

Target applications

- Industrial motor drives - compact, standard, premium, servo drives
- General purpose drives
- Solar inverters
- UPS systems
- EV charging
- Energy storage systems

Competitive advantage

- Enables fast design cycles due to its configurability & low external component count
- Unique configurability via I2C for DESAT, soft-off, UVLO, active Miller clamp, over temperature shutdown, two level turn off, highly flexible for customer designs (1ED38XX)

Product collaterals / Online support

Product page

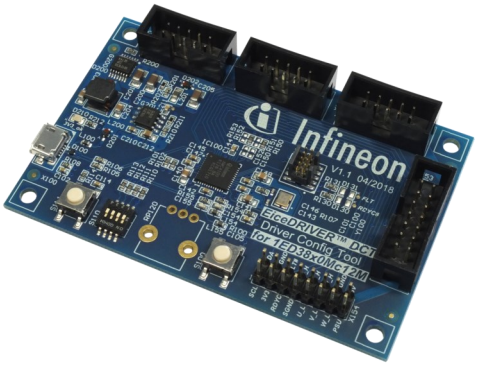
User manual

Product overview incl. user manual link

OPN	SP Number	Package
EVAL1ED3890MX12MTOBO1	SP005575921	board

Evaluation board - EVAL-1ED38x0DCT

Companion board EVAL-DCT-1ED3890MX12M to evaluate EiceDRIVER™ X3 1ED3890Mx12M. XMC4200-powered enabling I2C configurability for DESAT, soft-off, UVLO, Miller clamp, TLTO and fault.



Features

- XMC4200 based companion board meant to be used with evaluation boards that require a microcontroller (e.g., EVAL-1ED3890MX12M)
- USB connector for host computer communication
- Connectors enabling connection to evaluation boards

Benefits

- Companion board enabling system-level gate driver evaluation (microcontroller, gate drivers, power switches)
- - Meant to be used with EiceDRIVER™ 1ED3890Mx12M
- - Companion board concept enables usage with different evaluation boards

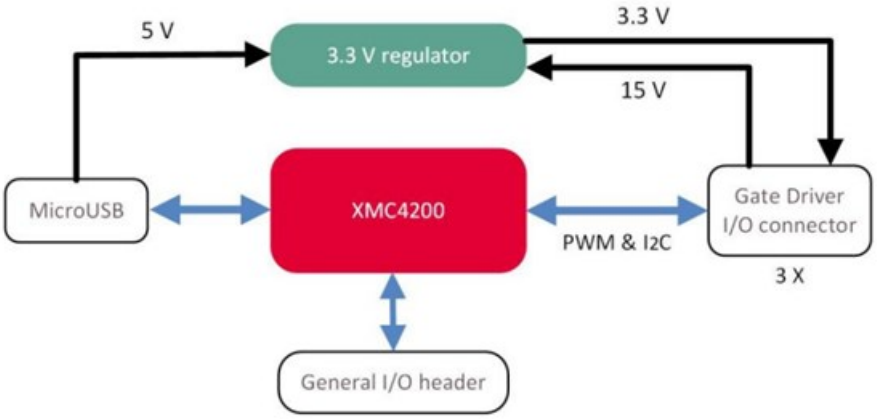
Target applications

- Industrial motor drives - compact, standard, premium, servo drives
- General purpose drives
- Solar inverters
- UPS systems
- EV charging
- Energy storage systems

Competitive advantage

- Enables fast design cycles due to its configurability & low external component count
- Unique configurability via I2C for DESAT, soft-off, UVLO, active Miller clamp, over temperature shutdown, two level turn off, highly flexible for customer designs (1ED38XX)

Block diagram



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User manual

Product overview incl. user manual link

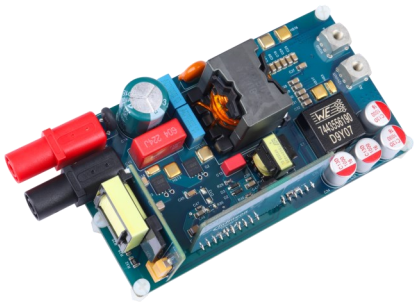
OPN	SP Number	Package
EVAL1ED38X0DCTTOBO1	SP005576942	board

Evaluation board - EVAL-2ED2101-HB-LLC

EVAL-2ED2101-HB-LLC is a fast-switching, resonant ZVS 200 W LLC-converter power stage with active synchronous rectifier output stage. It is designed to showcase the use of high switching frequencies up to 500 kHz in an LLC converter design, which provide many system benefits such as lower EMI, reduced passive component size and footprint, as well as overall system size and BOM cost.

This evaluation board features the 2ED2101S06F SOI level-shift gate driver for driving the primary-side half-bridge and the dual-channel low-side gate driver 2ED24427N01F with pulse transformer to ensure control-signal isolation for the secondary rectifying stage. Also, the 2ED24427N01F is used to drive the synchronous rectification output stage. It includes all of the required elements for an LLC converter, such as the high-performance resonant controller ICE2HS01G, IPL60R650P6S 600 V CoolMOS™ P6 transistors, and BSC022N04LS6 OptiMOS™ switches.

EVAL-2ED2101-HB-LLC can be used to evaluate the performance of the 2ED2101S06F and is a complete system solution highlighting Infineon components in high frequency resonant ZVS power conversion topologies.



Features

- Complete Infineon system solution for a 200 W HB-LLC resonant ZVS power supply
- 500 kHz (> 600 kHz bursts under light load conditions)
- Synchronous rectification for output stage
- Input voltage 350 - 425 VDC
- Maximum 200 W at 16.7 A, 400 VDC power input, airflow cooling sufficient
- Overcurrent protection
- Power-up LED reporting
- Controller board with ICE2HS01G
- Auxiliary power supply with isolated 13 V and 5 V for secondary side supply
- PCB is 65 mm × 137 mm, 4 layers, 2 oz. copper, RoHS compliant

Benefits

- Complete Infineon system solution for 200 W HB-LLC resonant ZVS power supply
- High switching frequency reduces the size of cost of resonant components – system BOM cost savings
- High side half-bridge switch driven directly eliminates need for pulse transformer further saving board space and system level BOM cost savings
- High power density
- High Efficiency

Target applications

- High efficiency SMPS
- Chargers

Competitive advantage

- A reference designs, which helps to design outdoor units (ODU) more efficient, denser and faster :
  - **Efficiency -** Excellent PFC performance with a power factor (PF) of 0.999 and a total harmonic distortion (THD) of 3.4% at 1.4 kW
  - **Size -** Up to 15% smaller design compared to discrete implementation
  - **Speed -** Reduced time to market by concentrating on application development rather than on motor control

Product collaterals / Online support

Product page

Application note

User manual

Product overview incl. user manual link

OPN	SP Number	Package
EVAL2ED2101HBLLCTOBO1	SP005567453	board