



New Product Introduction

August 2019

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IR3826M - OptiMOS™ IPOL voltage regulator

The IR3826M is an easy-to-use, fully integrated and highly efficient DC-DC regulator. The onboard PWM controller and OptiMOS™ MOSFETs with integrated bootstrap diode make the IR3826M a small footprint solution, providing high-efficiency power delivery.

The IR3826M is a versatile regulator, operating with wide input and output voltage range, offering programmable switching frequency from 300 kHz to 1.5 MHz, and providing three selectable over current limits.

It also features important protection functions, such as pre-bias start-up, thermally compensated current limit, over voltage protection and thermal shutdown to give required system level security in the event of fault conditions.



Features

- > Constant frequency operations (Gen3 VM PWM engine)
- > OptiMOS™ 5 for enhanced efficiency
- > ROHS fully compliant without exemptions

Benefits

- > Pin compatible to previous generation IPOLs (IR3824/5/9)
- > Risk free efficiency upgrade with OptiMOS™ 5 (efficiency improvement > 2% peak and > 6% at 20 A)

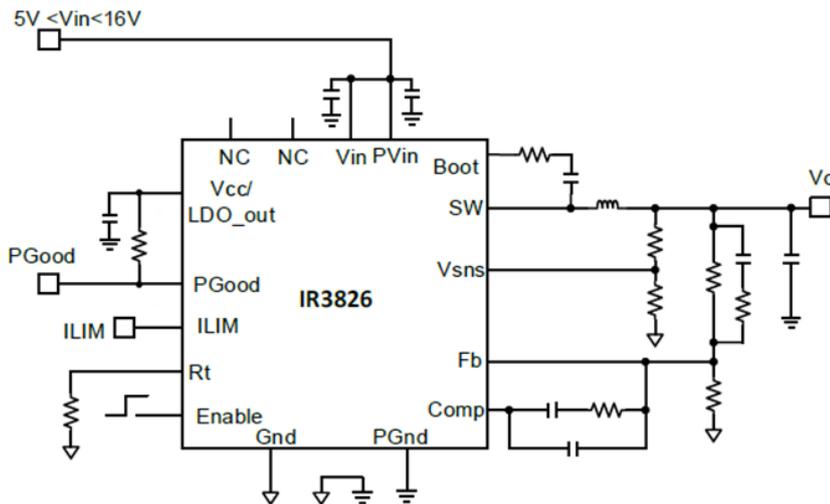
Target applications

- > Storage Applications
- > Telecom & datacom applications
- > Distributed Point of Load power architectures

Competitive advantage

Compared to alternative solutions in the same price range (and former IFX Gen3) this part offers higher efficiency to save power, allows cool operations without heatsink or airflow at high ambient temperature in thermally challenged applications and enable operations at 1MHz for higher density with good efficiency and thermal (up to 50% pcb size saving estimated for 1 MHz operations vs 600 kHz).

Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
IR3826MTRPBFAUMA1	SP001721128	PG-IQFN-22
EVAL382623ATOBO1	SP001716886	board

Product collaterals / Online support

- [Product page](#)
- [Product brief](#)
- [Material content sheet](#)

XDPL8210 - Digital flyback high power factor XDP™ control IC

The XDP™ control IC XDPL8210 is a digital, single-stage, quasi-resonant flyback controller with high power factor and high precision primary-side controlled constant current output. Main application fields for XDPL8210 control IC are cost-effective, constant current, single-stage LED drivers. XDPL8210 provides an easy way to design high performance LED drivers with various features. Sophisticated algorithms feature flicker-free dimming below 1%, supporting IEC61000-3-2 Class C designs over wide load range.



Features

- > PWM dimming input and analog output current modulation
- > Dim-to-off with low standby power <150 mW
- > Wide output voltage range 3x
- > Excellent PF and THD over full input voltage range and down to 30% of nominal load paired with selectable operating parameters
- > Configurable high-reliability protection features

Benefits

- > Extra power for external devices
- > Device is less susceptible to interference and generates no flicker induced by dimming
- > More choices for light engine configuration
- > Faster development cycle
- > Flexible section of protection features in accordance with needs and regulations

Target applications

- > Single-stage LED driver with constant current output

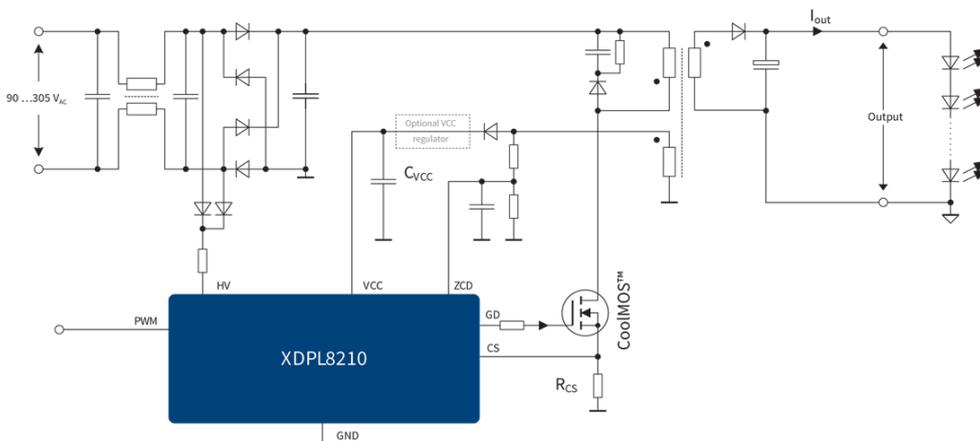
Reference board REF-XDPL8210-U35W

35 W reference board for LED driver with isolated 0 to 10 V dimming and dim-to-off operation.

This reference board operates as a constant current board with XDP™ digital power controller IC XDPL8210 for LED drivers. The board features analog dimming input with CDM10VD device. It has excellent power quality over wide load range. With the REF-XDPL8210-U35W output current and output power are configurable by parameters via the XDP™ interface board (IF-BOARD.DP-GEN2) and .dp Vision software. It provides protections for all failure modes.



Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
XDPL8210XUMA1	SP001643692	PG-DSO-8
REFXDPL8210U35WTOBO1	SP001886070	board

Product collaterals / Online support

- [Product page](#)
- [Board page](#)
- [Product brief](#)
- [Product qualification report](#)

OptiMOS™ 5 – 80/100 V MOSFETs in TO-Leadless

Infinion's OptiMOS™ 5 80/100 V n-channel power MOSFETs in TO-Leadless (TOLL) package are ideally suited for high switching frequencies.

This package is especially designed for high current applications such as POL (point-of-load), forklift, light electric vehicles (LEV) and telecom power supply.

With a 60% space reduction compared to D²PAK 7-pin package, TOLL is the perfect solution where highest efficiency, outstanding EMI behavior as well as best thermal behavior and space reduction are required.



Features

- > Space and footprint reduction
- > Very low package parasitic and inductances
- > Significantly reduced electromigration due to improved solder contact area

Benefits

- > Highest efficiency and system cost reduction
- > Less paralleling and cooling required
- > Enabling compact design

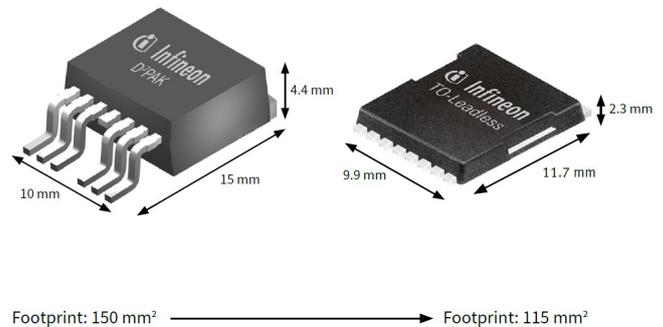
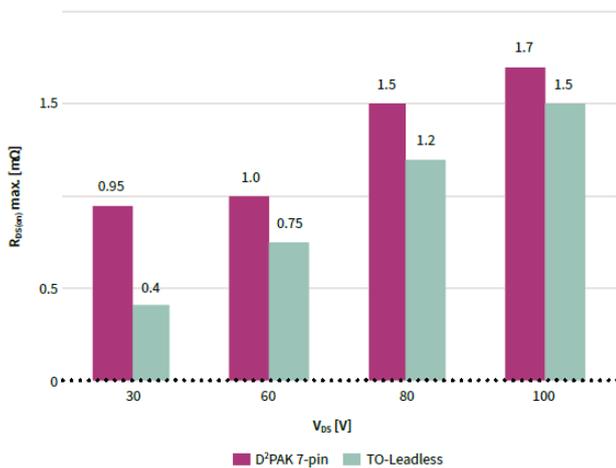
Target Applications

- > Forklift
- > Light electric vehicles (LEV)
- > Point-of-loads (POL)
- > Telecom
- > e-fuse

Competitive advantage

- > Lowest $R_{DS(on)}$ in its class
- > Highest current carrying capability
- > Best in class $R_{DS(on)} \times Q_g$ figure of merit (FOM)

With TO-Leadless Infineon offers lowest $R_{DS(on)}$



Product overview incl. data sheet link

OPN	SP Number	Package
IPT019N08N5ATMA1	SP003883402	PG-HSOF-8
IPT020N10N5ATMA1	SP003883410	PG-HSOF-8
IPT026N10N5ATMA1	SP003883420	PG-HSOF-8

Product collaterals / Online support

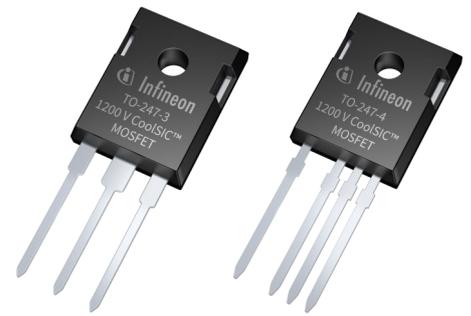
- [Product family page](#)
- [Product brief](#)
- [Application note](#)
- [Selection guide](#)

1200 V CoolSiC™ MOSFETs in TO247-3/-4 package

The 1200 V CoolSiC™ MOSFETs (45 mOhm) in TO247-3/-4 package build on a state-of-the-art trench semiconductor process optimized to combine performance with reliability.

Technical advantages of SiC devices provide new options vs. Si devices for improvement of power conversion systems, for making next steps in energy efficiency. Compared to Si based switches like IGBTs and MOSFETs, the SiC MOSFET offers a series of advantages. For example, the lowest gate charge and device capacitance levels seen in 1200 V switches, no reverse recovery losses of the internal commutation proof body diode, temperature independent low switching losses, and threshold-free on-state characteristic.

CoolSiC™ MOSFETs are ideal for hard- and resonant-switching topologies like power factor correction (PFC) circuits, bi-directional topologies and DC-DC converters or DC-AC inverters.



Features

- > Very low switching losses
- > Threshold-free on state characteristic
- > Wide gate-source voltage range
- > Benchmark gate threshold voltage, $V_{GS(th)} = 4.5\text{ V}$
- > 0 V turn-off gate voltage for easy and simple gate drive
- > Fully controllable dV/dt
- > Robust body diode for hard commutation
- > Temperature independent turn-off switching losses

Additional feature for TO247-4 package

- > Sense pin for optimized switching performance

Benefits

- > Efficiency improvement
- > Enabling higher frequency
- > Increased power density
- > Cooling effort reduction
- > Reduction of system complexity and cost

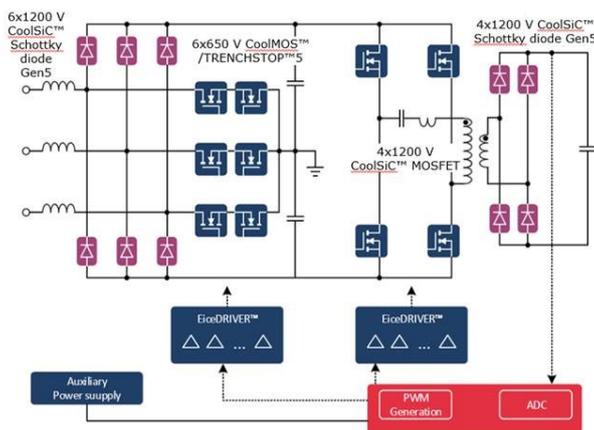
Competitive advantage

- > Benchmark gate threshold voltage, $V_{GS(th)} = 4.5\text{ V}$
- > 0 V turn-off gate voltage for easy and simple gate drive
- > Short circuit capability of 3 μs at gate voltage 15 V.

Target applications

- > Solar energy systems
- > EV charging
- > Uninterruptible power supply (UPS)
- > Power supplies
- > Motor control and drives

Application diagram



Product overview incl. data sheet link

OPN	SP Number	Package
IMW120R045M1XKSA1	SP001346254	PG-TO247-3
IMZ120R045M1XKSA1	SP001346258	PG-TO247-4

Product collaterals / Online support

[Product page IMW120R045M1](#)

[Product page IMZ120R045M1](#)

[Application note](#)

[Video](#)

OptiMOS™ 5 – Logic level power MOSFETs in SuperSO8

OptiMOS™ 5 power MOSFETs in logic level are highly suitable for charging, adapter and telecom applications. The devices' low gate charge reduces switching losses without compromising conduction losses. Logic level MOSFETs allow operations at high switching frequencies and due to a low gate threshold voltage can be driven directly from microcontrollers.



Features

- > Low $R_{DS(on)}$ in a small package
- > Lowest charge -> low gate, output and reverse recovery charge
- > Increased power density
- > Better price performance ratio

Target Applications

- > Charger
- > Adapter
- > Telecom

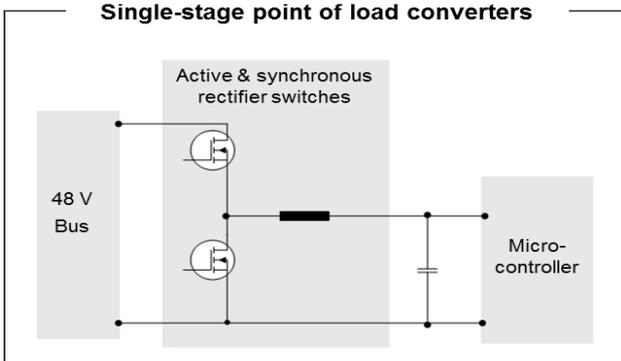
Benefits

- > Higher switching frequency
- > Reduced part count wherever 5 V supplies are available
- > Low switching losses
- > System cost reduction

Competitive advantage

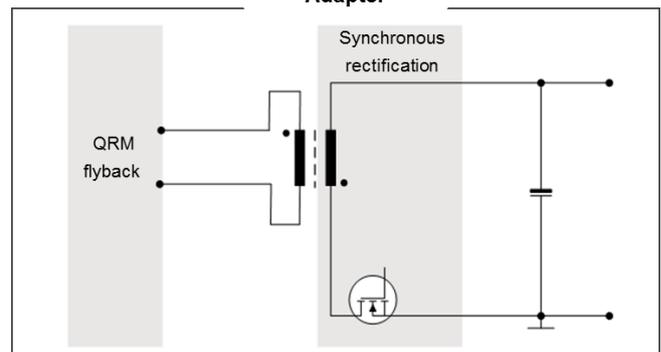
- > Can be driven directly from microcontrollers (slow switching)
- > Reduced system BOM compared with a normal level MOSFET

Single-stage point of load converters



Package	Voltage class [V]	Product type	$R_{DS(on)}$ max. @ $V_{GS} = 10\text{ V}$ [m Ω]	$R_{DS(on)}$ max. @ $V_{GS} = 4.5\text{ V}$ [m Ω]
SuperSO8	80	BSC025N08LS5	2.5	3.3
	100	BSC034N10LS5	3.4	4.6

Adapter



Package	Voltage class [V]	Product type	$R_{DS(on)}$ max. @ $V_{GS} = 10\text{ V}$ [m Ω]	$R_{DS(on)}$ max. @ $V_{GS} = 4.5\text{ V}$ [m Ω]
SuperSO8	100	BSC070N10LS5	7.0	~10

Product overview incl. data sheet link

OPN	SP Number	Package
BSC025N08LS5ATMA1	SP001385618	PG-TDSON-8
BSC034N10LS5ATMA1	SP001385620	PG-TDSON-8
BSC070N10LS5ATMA1	SP001861044	PG-TDSON-8
BSC096N10LS5ATMA1	SP001861036	PG-TDSON-8
BSC146N10LS5ATMA1	SP001385464	PG-TDSON-8

Product collaterals / Online support

- [Product family page](#)
- [Product brief](#)
- [Product selection guide](#)
- [Simulation tool](#)