

Product brief

XDPP1100*

The smallest digital power controller with PMBus interface

The XDPP1100 is Infineon's highly integrated and programmable digital power supply controller. This device offers advanced power control solution for 48 V DC-DC power applications with isolated topologies. The XDPP1100 device features many optimized power-processing blocks and pre-programmed peripherals to enhance the performance of Isolated DC-DC converters, reduce external components and minimize firmware development effort. The controller also provides accurate telemetry and power management bus (PMBus1.3) interface for system communication, advance power conversion and monitoring. Integrated current sensing capability and compact chip size (24-pin 4 mm²) can greatly reduce the solution size by eliminating various external components.

A combination of high performance AFE, state machine based digital control loop and an Arm® Cortex® M0 integrated in a single chip makes the XDPP1100 a highly integrated, fully programmable and fastest time-to-market technology for modern high-end power systems, employed in telecom infrastructure, 48 V server motherboards, datacenter and industrial 4.0 applications.

The XDPP1100 device can be configured to support different DCDC topologies including:

- > Hard-switched full bridge and half bridge
- > Phase shifted full bridge
- > Active clamp forward
- > Interleaved FB, HB and ACF
- > Current-doubler
- > Pre-buck or post-buck configuration

Infineon offers support tools such as a complementary graphic user interface (GUI) that allows customers to configure and monitor key parameters. In addition, developers have full control of their application and FW development process with commonly used Arm® based compilers.

Typical applications:

- > Isolated DCDC brick modules
- > Telecom radio power
- > 48 V point of loads
- > Non-isolated buck boost converters
- > 48 V server motherboard

Key features

- > State machine based digital control for up to 2 independent voltage loops
- > Configurable feedback control
- > Arm® Cortex®-M0 processor
- > Up to 16 configurable GPIOs
- > Up to 12 high resolution digital modulated PWM outputs
- > Input voltage feed-forward control scheme
- > 3 high-speed voltage sense ADCs: 50 MHz 11-bit ADC with set point accuracy within ±1% over temp range
- > 2 current sense ADCs: 25 MHz, 9-bit with 100 µV and 1.45 mV LSB
- > Communication: 1 MHz I2C/ PMBus,
- > Operating temperature from -40 °C to 125 °C

Key benefits

- > Ease of use thanks to firmware-based system configuration with GUI support
- > User-specific customization and software-based design changes
- > Enhanced control and excellent dynamic transient performance
- > Sophisticated system level fault handling
- > System housekeeping i.e. fan control, LED control, sequencing, with configurable GPIOs
- > High efficiency at light load management

www.infineon.com/xdpp1100

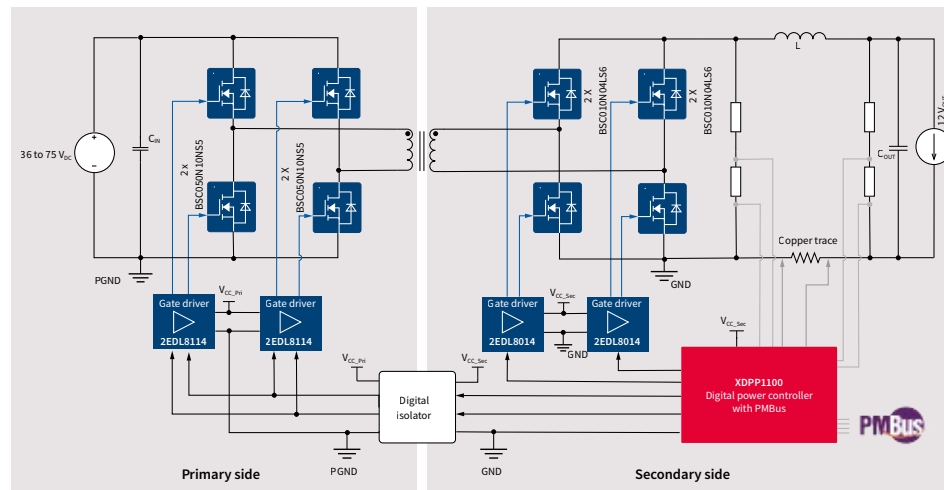
* Prototype



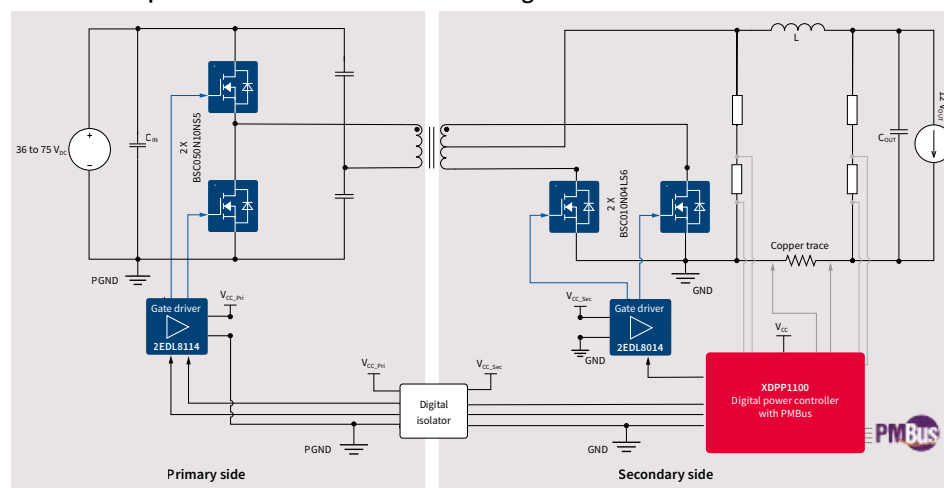
XDPP1100*

The smallest digital power controller with PMBus interface

XDPP1100 implementation in 48 V to 12 V full-bridge isolated DC-DC converter



XDPP1100 implementation in 48 V to 12 V full-bridge isolated DC-DC converter



The XDPP1100 device is offered in two packages

VQFN 24-pin	VQFN 40-pin
4 mm x 4 mm	6 mm x 6 mm
6 PWM	12 PWM
Single loop	Dual loop

* Prototype

Published by
Infineon Technologies Austria AG
9500 Villach, Austria

© 2020 Infineon Technologies AG.
All Rights Reserved.

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.