

## Product brief

# XDP™ digital power XDPS21081

## Multi-mode, digital and configurable flyback controller

The XDP™ digital power XDPS21081 is a flyback controller with zero voltage switching (ZVS) on the primary side to achieve high efficiency with simplified circuitry and economical switches resulting in lower BOM cost.

**High system efficiency with patented forced-frequency-resonant switching operation**  
By negative magnetization, the patented forced-quasi-resonant (FQR) switching scheme reduces the losses associated with today's valley-switching type of controllers without sacrificing the design simplicity of fixed-frequency switching schemes.

### Ease of design and system optimization with intelligent, self-adaptive multi-mode operation

To further optimize SMPS under varying load and line input conditions, the XDPS21081 comes with an intelligent, self-adaptive digital algorithm. This results in matching each line/load condition with the best-fit operational mode (e.g., burst mode, quasi-resonant, ZVS) to yield an unparalleled performance in its class. With its configurable parameters, the XDPS21081 serves as a scalable platform over a range of power classes - swiftly, simply, and precisely.

### Increase system robustness with an adaptive overcurrent protection (OCP) profile

In applications where the output voltage changes according to requirements (e.g., fast charging and USB power delivery), the maximum allowable output current will be adjusted using a configurable threshold according to different output voltage settings to meet the limited power supply (LPS) requirement.

### Key features

- › Forced-quasi-resonant mode
- › Self-adaptive, multi-mode operation
- › Supporting fast-charging applications with variable output voltage
- › Maximum switching frequency of up to 140 kHz
- › Adaptive overcurrent protection for limited power supply
- › Frequency clamp at high-line input with low-output voltage
- › UART port for configuring digital parameters
- › DSO-12 SMD package

### Key benefits

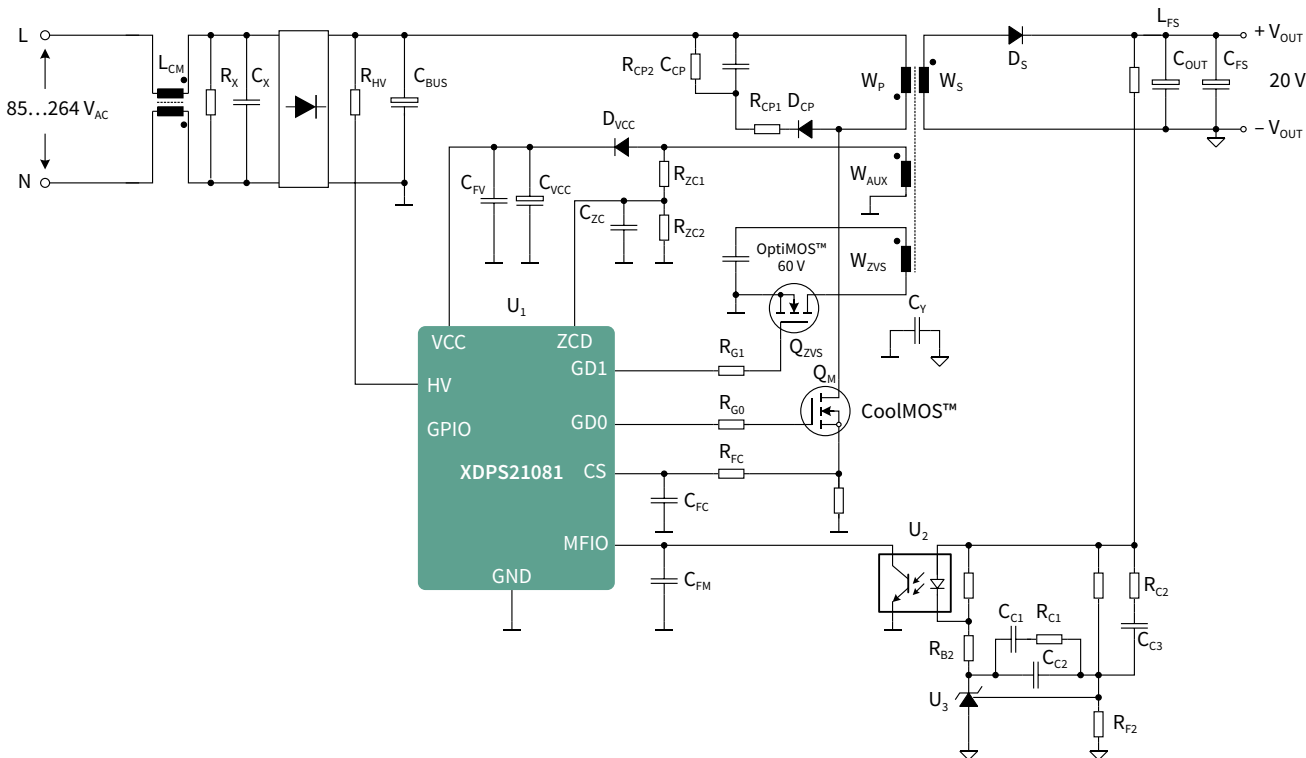
- › High power density design with FQR and 140 kHz switching frequency
- › Support LPS protection to meet safety regulatory requirements
- › Light-load efficiency optimized for variable output application
- › Fast and precise system tuning with configurable digital parameters
- › Lead-free, RoHS compliant



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### Typical application schematic



### Product portfolio

Product	Description	Orderable part number (OPN)	Package
XDPS21081	FQR flyback PWM controller	XDPS21081XUMA1	DSO-12

### Design and support tools

Type	Description	Ordering code	Additional information
REF_XDPS21081_65W1	65 W USB-PD 3.0 type C charger	REFXDPS2108165W1TOBO1	www.infineon.com/dpVision
IF-BOARD.DP-GEN2	Gen2 .dp interface board	IFBOARDDPGEN2TOBO1	
GUI .dp Vision	Graphical user interface software to configure parameters via a PC	Free download	

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