

Market News

High efficiency: A multi-mode, forced-frequency-resonant digital controller IC for SMPS applications

Munich, Germany – 3 February 2020 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) launches the XDP™ digital power XDPS21071, the first flyback controller in the industry with zero-voltage switching (ZVS) on the primary side to achieve high efficiency. This controller is aimed at fast-charging applications such as USB-PD or QuickCharge. Light-load efficiency is optimized for variable output application.

The XDPS21071 is a high-performance digital flyback controller with an integrated dual-MOSFET gate driver and a 600 V depletion startup unit. The primary-side controller drives a high-voltage external MOSFET in a flyback topology and an external low-voltage MOSFET to create a pulse for achieving ZVS condition at the high-voltage MOSFET. It supports fixed-frequency switching up to 140 kHz.

The patented forced-frequency-resonant (FFR) switching scheme is implemented by means of a digital algorithm, which is configurable via parameter settings (UART port is included) to meet application requirements and the conversion efficiency of international regulatory standards (i.e., EU CoC version 5 Tier 2 and DoE Level VI). Ease of design and system optimization are made possible thanks to the intelligent, self-adaptive multi-mode operation that matches each line/load conditions with the best-fit operational mode (i.e., FFR, CrCM, burst mode) for unparalleled system performance. Hereby ZVS operation enables for lowest switching losses. Highest system performance is achieved by only a minimal adder in BOM cost. This controller comes with adaptive overcurrent protection. It is lead-free and RoHS compliant.

Availability

The XDPS21071 in DSO-12 SMD package is now available. In addition to the controller, a 45 W USB-PD Type-C quick charger reference design ([REF_XDPS21071_45W1](#)) will be on offer in March 2020 featuring Infineon's digital flyback controller XDPS21071, [700 V CoolMOS™ P7 Superjunction MOSFET](#) (IPD70R360P7S), [OptiMOS™ PD](#) synchronous-rectification MOSFET (BSC0805LS)

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and [small-signal-MOSFET](http://www.infineon.com/small-signal-MOSFET) (BSL606SN). More information is available at www.infineon.com/xdps21071.



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