Market News

Infineon's XDPS2201 hybrid flyback controller delivers ultra-high-power density and outstanding efficiency for USB PD charger and adapter applications

Munich, Germany – 3 May 2021 – Rapid technology and market developments in the fast charger and adapter market continuously challenge designers of power supply systems. To meet the increasing demand for higher power density and energy efficiency, Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) expands its XDP™ family by adding the first application-specific standard product based on an asymmetric half-bridge flyback topology. Available in a DSO-14 SMD package, the XDPS2201 is a highly integrated, multi-mode, digital and configurable hybrid flyback controller targeting high-density AC-DC power supplies, including USB PD fast charger and adapter applications.

The XDPS2201 combines the simplicity of a traditional flyback topology with the performance of a resonant converter. This combination allows natural soft switching, which reduces switching losses associated with high switching frequency designs. The controller enables zero voltage switching (ZVS) and zero current switching (ZCS) across AC line inputs, load conditions and variable output voltages. This feature is highly beneficial for high-frequency designs with a planar transformer that can typically be found in USB PD charger applications.

To achieve optimized performance under various output voltage, load and line input conditions, the XDPS2201 comes with an intelligent, self-adaptive digital algorithm. It supports a multi-mode operation to ensure that the best-fitting operation mode for each condition is selected to yield a continuously high efficiency level. The hybrid flyback controller also integrates a comprehensive suite of protection features, including brown-in and -out, dual-level overcurrent, output over-voltage, output under-voltage and over-temperature detection.

The asymmetric half-bridge flyback topology allows the implementation of CoolMOS™ MOSFETs to achieve highest system efficiency and power density. The XDPS2201 is driving both high- and low-side MOSFETs in an asymmetric control

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manner. The product features an integrated high-side driver that allows BOM savings of up to 20 external components. The topology enables a snubber-less design and the use of high voltage MOSFETs from 500 V and up. This reduces the number as well as the cost of components.

In a cost-effective manner, the XDPS2201 supports highest power density designs with an efficiency of up to 93.8 percent and more than 92 percent on average across different AC line and load conditions.

Availability

The XDPS2201 is available in a DSO-14 SMD package and can be ordered now. More information is available at http://www.infineon.com/xdp. The hybrid flyback controller will be showcased at Infineon's Virtual Power Conference, which complements "PCIM Europe digital days."

Infineon's Virtual Power Conference 2021

Experience the difference in Power – Power semiconductors are the key to an energy-efficient world. New technologies such as silicon carbide (SiC) and gallium nitride (GaN) enable higher power efficiency, smaller form factors and lower weight. Silicon also plays a major role in many designs. Energy efficiency is the focus of the "Virtual Power Conference," which will be available 'live' from 4 to 6 May 2021. As a leading supplier of power semiconductors, Infineon will use the exclusive digital platform to present technologies and systems that generate energy more efficiently, transmit and distribute with lower losses, and showcase a wide range of energy-efficient applications. Focus areas comprise the verticals Industry, Transport & e-Mobility and Consumer. The online platform opens its doors starting 4 May 2021. Please click here to register.

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