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Strengthening the link between the real and the digital world (/cms/en/about-infineon/company/cypress-acquisition/)

REF_XDPS2201_170W_BPA

Overview

170 W AC-DC reference design for e-bike battery charger

Infineon's REF_XDPS2201_170W_BPA is a highly efficient 170 W single-stage hybrid-flyback reference design aimed for 24 V and 36 V Li-Ion battery packs typically found in chargers for e-bikes or power tools.

The design incorporates a digital controller, XDP™

XDPS2201 (/cms/en/product/power/ac-dc-power-conversion/ac-dc-pwm-pfc-controller/llc-resonant-n controller/xdps2201/)

, with multi-mode operation and two 600 V CoolMOS™ P7 superjunction MOSFETs (



IPA60R280P7S (/cms/en/product/power/mosfet/n-channel/500v-950v/ipa60r280p7s/) that combine excellent efficiency (greater than 95%) > Products (/cms/en/product/) > Evaluation Boards (/cms/en/product/evaluation-boards/)

> REF_XDPS2201_170W_BPA

Summary of Features

- Topology: Hybrid flyback (asymmetric half-bridge)
- Input:
 - $V_{IN} = 198 - 264 \text{ VAC}$, 50..60 Hz
 - Standby < 250 mW @ 230 V at no load
- Output:
 - $V_{OUT} = 18...42 \text{ V}$, $I_{out} = 0.4...4.0 \text{ A CC}$, $P_{OUT} = 170 \text{ W}$
 - $V_{AUX} = 5 \text{ V} / 500 \text{ mA}$
- Efficiency: >95% @230 V_{AC}at full load

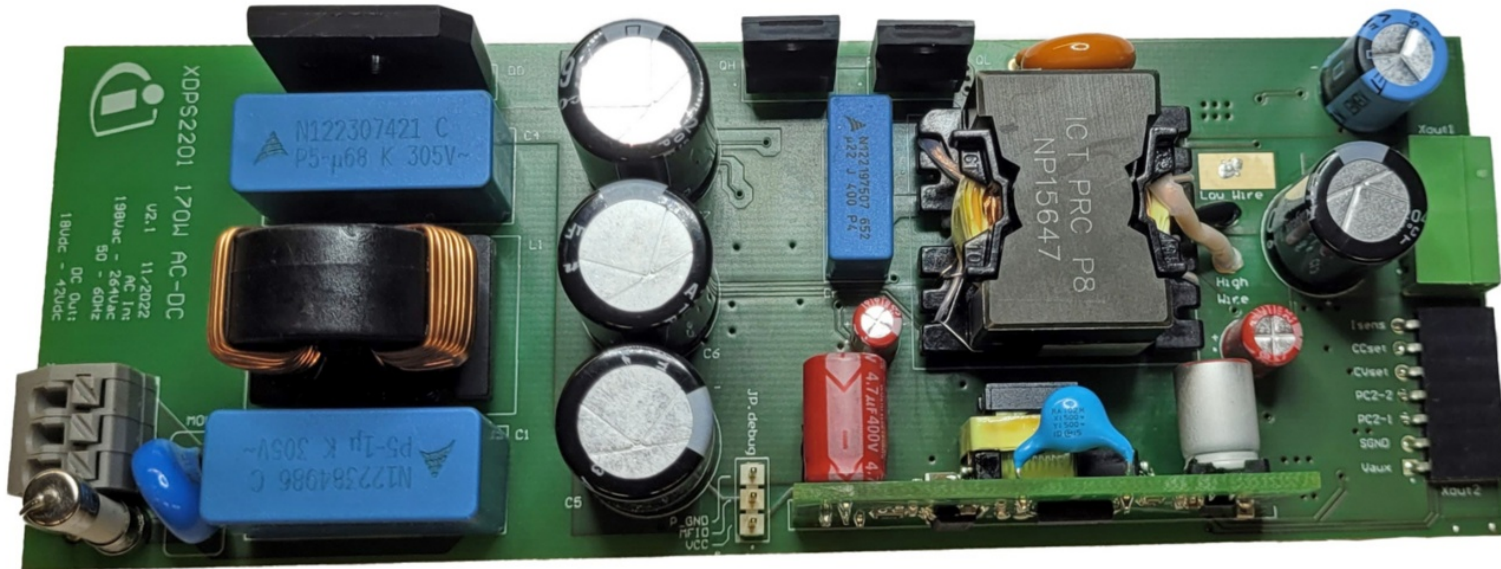
Benefits

- No PFC, low system cost
- Simple transformer design compared to resonant converter
- Wide output voltage range
- High efficiency

List of components



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Parametrics

Parametrics	REF_XDPS2201_170W_BPA
Features	Efficiency at 100% load and 230 VAC input voltage: 95% Control Interface for constant current set-point adjustment (0 to 3.3 V signal) and for constant voltage set-point (0 to 3.3 V signal optionally) Independent 5 VDC auxiliary supply for external MCU controlling
Frequency max	180 kHz



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> Home (/cms/en/)	> Products (/cms/en/product/) > Evaluation Boards (/cms/en/product/evaluation-boards/)
> REF_XDPS2201_170W_BPA I _{out} min max	4 A 0.3 A 4.2 A
Input Type	AC
Input Voltage min max	230 V 198 V 264 V
Output Voltage min max	40 V 18 V 42 V
Target Application	Charging;eMobility;Power Tools;SMPS
Topology	Hybrid flyback topology
V _{out}	DC

Documents

> Login (/sec/login?ret=https%3A%2F%2Fwww.infineon.com%2Fcms%2Fen%2Fproduct%2Fevaluation-boards%2Fref_xdps2201_170w_bpa%2F%23!documents)
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