High Efficiency 400W AC/DC Power Supply Reference Design

(ACTIVE) PMP11064.2

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Key Document

- PMP11064 Test Results [PDF 1338 KB]
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PMP11064.2 High Efficiency 400W AC/DC Power Supply Reference Design
Top of Board Image

Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Description

PMP11064 is a high-efficiency AC/DC power supply reference design with universal AC input and 20V/20A output. Interleaved transition mode PFC and LLC series resonant converter is applied for 20V/20A main power. A PSR Flyback with MOSFET integrated controller is applied as the auxiliary supply. 91.2% efficiency is achieved at low line and full load. 93.1% efficiency is achieved at high line and full load.

Features

- 400W PSU with interleaved transition mode PFC and LLC-SRC
- 91.2% efficiency at 120VAC/60Hz and full load
- 93.1% efficiency at 230VAC/50Hz and full load
- 100mm x 200mm board dimension
- Test report is available
- Over 20mS hold up time

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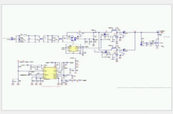
Schematic/Block Diagram

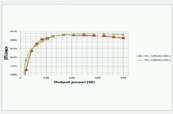
Quickly understand overall system functionality.



Download Schematic

Design Guide

Get results faster with test and simulation data that's been verified.



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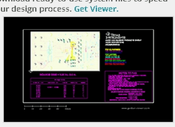
Design Files

Download ready-to-use system files to speed your design process. Get Viewer.



Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP11064.2
Vin (Min) [V]	85
Vin (Max) [V]	265
Vout (Nom) [V]	14
Iout (Max) [A]	1
Output Power [W]	1.4
Isolated/Non-Isolated	Isolated
Input Type	AC
Topology	Flyback- DCM

TI Devices (10)

Order samples, get tools and find more information on the TI products in this reference design.

Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
CSD18532KCS	60-V N-Channel NexFET™ Power MOSFET	Power MOSFET	Sample & Buy	View Design Kits & Evaluation Modules
INA213	26-V, Bi-Directional, Zero-Drift, High Accuracy, Low-/High-Side, Voltage Out Current Shunt Monitor	Current Sense Amplifiers	Sample & Buy	View Design Kits & Evaluation Modules
TL431B	Adjustable Precision Shunt Regulator	Voltage Reference	Sample & Buy	Not Available

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CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
INA213	SOT (DCK) | 6	Download	Download
	UQFN (RSW) | 10	Download	-
TL431B	SOT (DBZ) | 3	Download	Download
	TO-92 (LP) | 3	Download	Download
	SIP (PK) | 3	Download	-
	SOT (DBV) | 5	Download	Download
	SOT (DCK) | 6	Download	Download
	SOIC (D) | 8	Download	Download
	PDIP (P) | 8	Download	Download
	SOP (PS) | 8	Download	-
	TSSOP (PW) | 8	Download	Download
TPS715	SOT (DCK) | 5	Download	Download
UCC24610	SOIC (D) | 8	Download	Download
	VSON (DRB) | 8	Download	-
UCC25600	SOIC (D) | 8	Download	Download
UCC27524	SOIC (D) | 8	Download	Download
	HVSSOP (DGN) | 8	Download	-
	WSON (DSD) | 8	Download	-
	PDIP (P) | 8	Download	Download
UCC27714	SOIC (D) | 14	Download	-
UCC28063	SOIC (D) | 16	Download	Download
UCC28910	SOIC (D) | 7	Download	-

Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

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Technical Documents

User guides (1)

Title	Abstract	Type	Size (KB)	Date	Views	TI Recommends
PMP11064 Test Results		PDF	1338	21 Dec 2015	51	✓

Design files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP11064 Assembly Drawing		PDF	195	21 Dec 2015	43
PMP11064 BOM		PDF	259	21 Dec 2015	26
PMP11064 Schematic		PDF	337	21 Dec 2015	122

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