

High Efficiency 410W AC/DC Power Supply Reference Design

{ACTIVE} PMP11282.1

- Description & Features

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Key Document

-  [PMP11282 Test Results](#) (PDF 2333 KB)
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Description

PMP11282 is a high-efficiency AC/DC power supply reference design with universal AC input and 24V/17A output. Interleaved transition mode PFC and LLC series resonant converter is applied for 24V/17A main power. A PSR Flyback with MOSFET integrated controller is applied as the auxiliary supply. 91.98% efficiency is achieved at low line and full load. 94.61% efficiency is achieved at high line and full load.

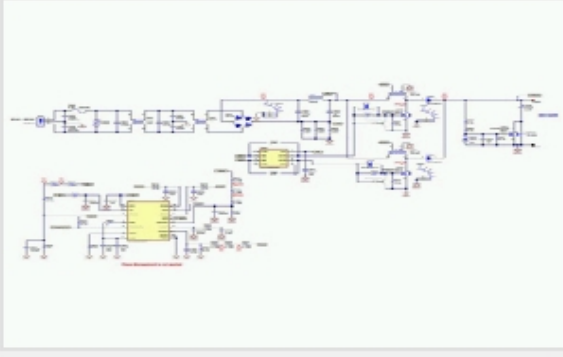
Features

- 410W PSU with interleaved transition mode PFC and LLC-SRC
- 91.98% efficiency at 120VAC/60Hz and full load
- 94.61% efficiency at 230VAC/50Hz and full load
- 125mm x 225mm board dimension
- Test report is available
- Conduction EMI test results included

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Schematic/Block Diagram

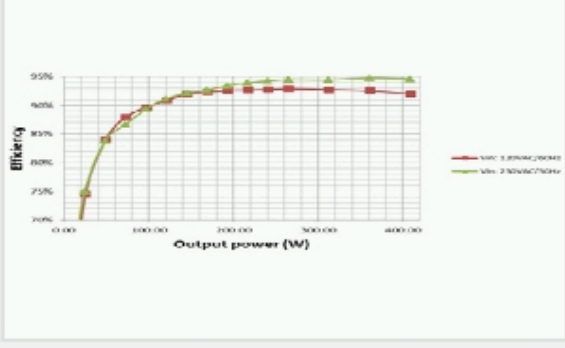
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Design Guide

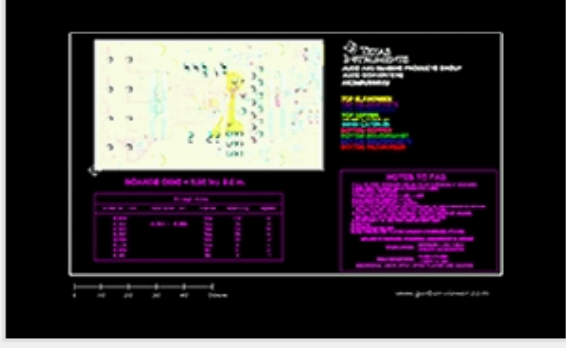
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Design Files

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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Parametrics

	PMP11282.1
Vin (Min) (V)	85
Vin (Max) (V)	265
Vout (Nom) (V)	24
Iout (Max) (A)	17
Output Power (W)	408
Isolated/Non-Isolated	Isolated
Input Type	AC
Topology	Boost- PFC Half Bridge- LLC

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
	 SOT (DCK) 5	Download	Download
TPS715	 SOT (DCK) 5	Download	Download
	 SOIC (D) 8	Download	Download
UCC24610	 VSON (DRB) 8	Download	-
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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](#)

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Technical Documents

User guides (1)

Title	Abstract	Type	Size (KB)	Date	Views	TI Recommends
 PMP11282 Test Results		PDF	2333	21 Dec 2015	172	✓

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP11282 Gerber (from PMP11064)		ZIP	840	21 Dec 2015	37
PMP11282 Altium (from PMP11064)		ZIP	1493	21 Dec 2015	75
 PMP11282 Assembly Drawing (from PMP11064)		PDF	193	21 Dec 2015	45
 PMP11282 BOM		PDF	262	21 Dec 2015	66
 PMP11282 Schematic (from PMP11064)		PDF	340	21 Dec 2015	274

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