High Efficiency 410W AC/DC Power Supply Reference Design

(ACTIVE) PMP11282.2

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Key Document

- PMP11282 Test Results (PDF 2333 KB)
  21 Dec 2015 162 views

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PMP11282.2 High Efficiency 410W 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

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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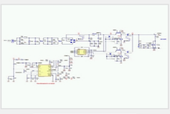
Schematic/Block Diagram

Quickly understand overall system functionality.



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Design Guide

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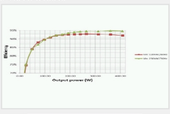

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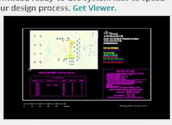
Design Files

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



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Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP11282.2
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
PMP11282 Test Results		PDF	2333	21 Dec 2015	162	✓

Design files (5)

Title	Abstract	Type	Size [KB]	Date	Views
PMP11282 Gerber [from PMP11064]		ZIP	840	21 Dec 2015	34
PMP11282 Altium [from PMP11064]		ZIP	1493	21 Dec 2015	69
PMP11282 Assembly Drawing [from PMP11064]		PDF	193	21 Dec 2015	42
PMP11282 BOM		PDF	262	21 Dec 2015	63
PMP11282 Schematic [from PMP11064]		PDF	340	21 Dec 2015	262

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