High Efficiency, High Power Factor 1300W AC/DC Power Supply Reference Design

(ACTIVE) PMP10948.2

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Key Document

- PMP10948 Test Results (PDF 2569 KB)
  21 Dec 2015 86 views

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PMP10948.2 High Efficiency, High Power Factor 1300W 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

PMP10948 is a high-efficiency, high power factor AC/DC power supply reference design using UCC28063 interleaved transition-mode PFC controllers. There are two PFC stages in this design, 750W output power generates from one of the PFC stages and 550W output power generates from the other PFC stage. This design achieve 95.6% efficiency at 120VAC input and 98% efficiency at 220VAC input with over 1300W output power.

Features

- Interleaved transition-mode PFC Boost converters for total 1300W output power
- 95.6% efficiency at 120VAC/60Hz input and 1300W output
- 98% efficiency at 220VAC/50Hz input and 1300W output
- Test report is available

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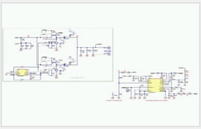
Schematic/Block Diagram

Quickly understand overall system functionality.



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Design Guide

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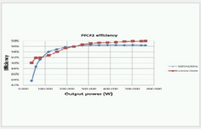

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Design Files

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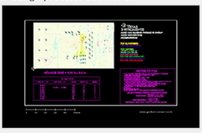

Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP10948.2
Vin (Min) (V)	90
Vin (Max) (V)	264
Vout (Nom) (V)	380
Iout (Max) (A)	1.447
Output Power (W)	549.86
Isolated/Non-Isolated	Non-Isolated
Input Type	AC
Topology	Boost- PFC

TI Devices (2)

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
UCC27324	Dual 4 A Peak High Speed Low-Side Power MOSFET Drivers	MOSFET and IGBT Gate Drivers	Sample & Buy	View Design Kits & Evaluation Modules
UCC28063	Natural Interleaving Transition-Mode PFC Controller with Improved Audible Noise Immunity	Offline and Isolated DC/DC Controllers and Converters	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
UCC27324	SOIC (D) | 8	Download	Download
	HVSSOP (DGN) | 8	Download	-
	WSON (DSD) | 8	Download	-
	PDIP (P) | 8	Download	Download
UCC28063	SOIC (D) | 16	Download	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
PMP10948 Test Results		PDF	2569	21 Dec 2015	86	✓

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10948 Gerber		ZIP	675	21 Dec 2015	21
PMP10948 PCB		PDF	1915	21 Dec 2015	32
PMP10948 Assembly Drawing		PDF	147	21 Dec 2015	25
PMP10948 BOM		PDF	200	21 Dec 2015	34
PMP10948 Schematic		PDF	273	21 Dec 2015	99

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