30A SIMPLE SWITCHER(R) Power Module with 3 to 14.5V Reference Design

(ACTIVE) PMP9464

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PMP9464- 30A SIMPLE SWITCHER® Power Module with 3.0V-14.5V Evaluation Board (top view)

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

Description

The reference design PMP9464 utilizes the LM231530, a 30A SIMPLE SWITCHER® Power Module. The LM231530 SIMPLE SWITCHER® power module is an easy-to-use integrated power solution that combines a 30-A DC/DC converter with power MOSFETs, a shielded inductor, and passives into a low profile, QFN package.

This design has a LM25056 on the front end. The LM25056 combines high performance analog and digital technology with a PMBus compliant SMBus/I2C interface to accurately measure the operating conditions of electrical systems including computing and storage blades connected to a backplane power bus. This allows the user to monitor the real time values of Vin, Iin, Pin and Pout as well as temperature and peak power. These values are reported via PMBus™/SMBus™/I2C.

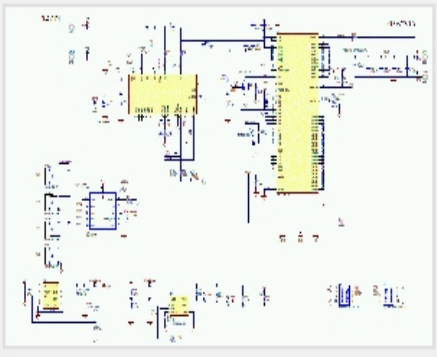
PMP9464 also enables the user to margin the output voltage setting, by slewing it up or down. This is done with the LM10011 VID programmable current DAC. The LP2951 supplies a 3.3V rail for the LM3881 power sequencer. The LM3881 sequencer can be used for sequencing other off board power supplies.

Features

- Adjustable from 0.6V to 3.3 Vout
- 30W Pout for powering wide range of FPGA core rails and asics
- Peak Efficiency at 85% for 0.9V
- Switching Frequency 500kHz
- Design ideal for Power Characterization during design phase and subsequent cost saving

Schematic/Block Diagram

Quickly understand overall system functionality.



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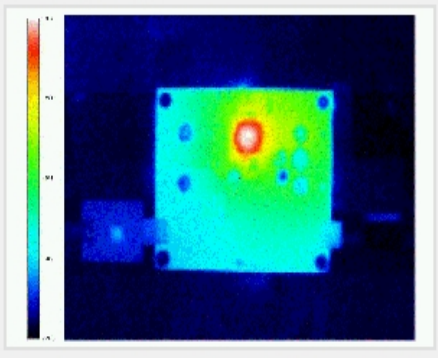

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Design Files

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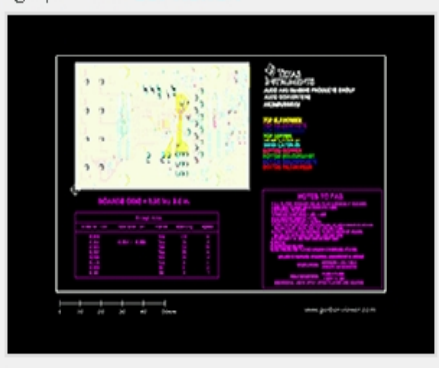

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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TI Devices (5)

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
LM10011	1% Accuracy 4/6-Bit VID Voltage Programmer for Point of Load Regulator w/ Adj Start-Up Current	Power Supply Support	Sample & Buy	View Design Kits & Evaluation Modules
LM25056	System Power Measurement IC with PMBus	Hot Swap Control, Protection and	Sample & Buy	View Design Kits & Evaluation

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CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
LM25056	WQFN (NHZ) | 24	Download	Download
LM3881	VSSOP (DGK) | 8	Download	Download
LM231530	B4QFN (RLG) | 72	Download	-
LP2951	SOIC (D) | 8	Download	Download
	VSSOP (DGK) | 8	Download	Download

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9464 Test Results		PDF	967	21 Aug 2014	62

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9464 Gerber		ZIP	689	21 Aug 2014	46
PMP9464 BOM		PDF	60	21 Aug 2014	36
PMP9464 Schematic		PDF	351	21 Aug 2014	102

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