Compact Digital Quad 4/4/2/2A Point-of-load Reference Design for Space Constrained Applications

TI Designs

(ACTIVE) PMP11414.1

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Key Document

- PMP11414 Test Results (PDF 3111 KB)
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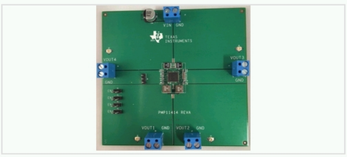

PMP11414.1 Compact Digital Quad 4/4/2/2A Point-of-load Reference Design for Space Constrained Applications Top of Board Image

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

Description

The PMP11414 reference design features TPS65400 quad 4/4/2/2A output point-of-load in a tiny 0.65"x0.875" solution size (16.5mmx22.2mm). TPS65400 fully integrates four buck regulators into a small 7mmx7mm QFN package. It also has PMBus capability for flexible control and configuration. The PMP11414 demonstrated high efficiency as well as intelligence for flexible margining and sequencing functions.

Features

- 7V to 14V in, 1.2Vout @ 4A, 1.8V@4A, 2.5V@2A and 3.3V@2A
- Total solution size: 0.65"x0.875" (16.5mmx22.2mm)
- Peak efficiency 91%
- Switching frequency 500kHz
- PMBus enabled margining and sequencing

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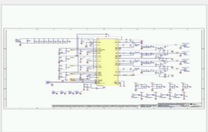
Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

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

	PMP11414.1
Vin (Min) (V)	7
Vin (Max) (V)	14
Vout (Nom) (V)	1.2
Iout (Max) (A)	4
Output Power (W)	4.8
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Buck- Synchronous

TI Devices (1)

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
TPS65400	4.5V to 18V input, 4A/4A/2A/2A synchronous quad converter with PMBus/I2C Interface	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS65400	VQFN (RGZ) | 48	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
PMP11414 Test Results		PDF	3111	26 Jan 2016	25	✓

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP11414 Gerber		ZIP	171	26 Jan 2016	15
PMP11414 CAD Files		ZIP	186	26 Jan 2016	21
PMP11414 PCB		PDF	366	26 Jan 2016	20
PMP11414 BOM		PDF	111	26 Jan 2016	20
PMP11414 Schematic		PDF	138	26 Jan 2016	35

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