

Menu

My products

No Products in your history

My technical documents

No documents in your history

My searches

No Searches in your history

Three Different Buck Converter Circuits to Convert 12V to 1.2V at >6A Load Current Reference Design

(ACTIVE) PMP11438

Description & Features

Technical Documents

Support & Community

Order Now

View the [Important Notice for TI Designs](#) covering authorized use, intellectual property matters and disclaimers.

Key Document

 **PMP11438 Test Results** (PDF 2536 KB)
21 Apr 2016 62 views

[View All Technical Documents \(5\)](#)

Description

PMP11438 is a vehicle used to compare three different power solutions for converting a 12V bus to 1.2V at 6-10A. The 1.2V output voltage is applicable to DDR4 memory applications. Each solution offers an advantage in either full load efficiency, light load efficiency, density, height, transient response, or some combination of these.

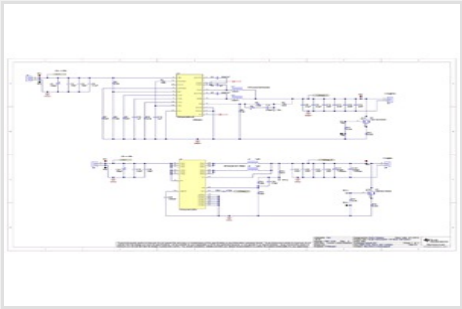
Features

- Two 1.2V/10A power converters and one 1.2V/6A converter
- Switched-capacitor buck converter, multi-phase buck converter, and single POL buck converter
- Light-Load efficiency available in all solutions
- Solutions with sub 2mm height
- On-board transient testers for controlled, high slew rate transient loads

TI's [Standard Terms and Conditions for Evaluation Modules](#) apply.

Schematic/Block Diagram

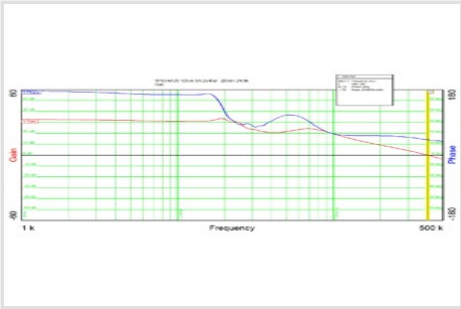
Quickly understand overall system functionality.



Download Schematic

Design Guide

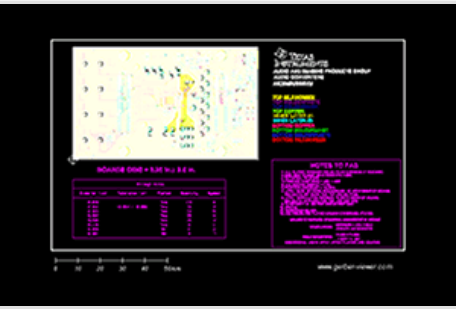
Get results faster with test and simulation data that's been verified.



Download Design Guide

Design Files

Download ready-to-use system files to speed your design process. [Get Viewer.](#)



Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP11438.1 (Output Voltage 1)	PMP11438.2 (Output Voltage 2)	PMP11438.3 (Output Voltage 3)
Vin (Min) (V)	10.8	10.8	10.8
Vin (Max) (V)	13.2	13.2	13.2
Vout (Nom) (V)	1.2	1.2	1.2
Iout (Max) (A)	10	6	10
Output Power (W)	12	7.2	12
Isolated/Non-Isolated	Non-Isolated	Non-Isolated	Non-Isolated
Input Type	DC	DC	DC
Topology	Buck- Multiphase Buck- Synchronous	Buck- Multiphase Buck- Synchronous	Buck- Synchronous

TI Devices (4)

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
CSD16410Q5A	N-Channel NexFET™ Power MOSFET	Power MOSFET	Sample & Buy	View Design Kits & Evaluation Modules
TPS53515	1.5V to 18V Input (4.5V to 25V Bias), 12-A Synchronous Step-Down SWIFT™ Converter	Step-Down (Buck)	Sample & Buy	View Design Kits & Evaluation Modules

Part Number ⚡	Name ⚡	Product Family ⚡	Sample & Buy	Design Kits & Evaluation Modules
TPS54A20	Small, 10MHz 10A, 8V to 14V Input, SWIFT Series Capacitor Step-Down Converter	Step-Down (Buck)	Sample & Buy	View Design Kits & Evaluation Modules

[Show More](#)

CAD/CAE symbols

Part #	Package Pins	CAD File (.bxl)	STEP Model (.stp)
CSD16410Q5A	VSONP (DQJ) 8	Download	-
TPS54A20	 VQFN-HR (RNJ) 20	Download	Download
TPS62184	 DSBGA (YZF) 24	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 [free download](#).

Step 2: Download the Symbol and Footprint from the CAD.bxl file table.

- [read more](#) -

Technical Documents

User guides (1)

Title	Abstract	Type	Size (KB)	Date	Views	TI Recommends
 PMP11438 Test Results		PDF	2536	21 Apr 2016	62	✓

Design files (4)

Title ⚡	Abstract ⚡	Type ⚡	Size (KB) ⚡	Date ▼	Views ⚡
PMP11438 Gerber		ZIP	413	21 Apr 2016	31
 PMP11438 Assembly Drawing		PDF	77	21 Apr 2016	29
 PMP11438 BOM		PDF	115	21 Apr 2016	35
 PMP11438 Schematic		PDF	171	21 Apr 2016	95

Applications

- [Ethernet Switch](#)

Support & Community

TI E2E™ community



As a member of [my.TI](#) you can join the [TI E2E™ Community](#) where you can ask questions, share ideas and collaborate with fellow engineers and TI experts

Contents are provided "AS IS" by the respective TI and Community contributors and do not constitute TI specifications. See [Terms of use](#).

Engage in the Community

- [Amplifiers](#)
- [Broadband RF/IF & Digital Radio](#)
- [Clocks & Timers](#)

- [Data Converters](#)
- [DLP® & MEMS](#)
- [Interface](#)

- [Logic](#)
- [Power Management](#)
- [Wireless Connectivity](#)

Wikis

[Visit the TI Wiki](#)

Other Support

- [TI E2E Community](#)
- [Contact Technical Support](#)

Your History

Products You Recently Viewed

There are no items in your history.

Mobile apps |  Mobile site

© Copyright 1995-2016 Texas Instruments Incorporated. All rights reserved.
Trademarks | [Privacy policy](#) | [Cookie policy](#) | [Terms of use](#) | [Terms of sale](#)