Isolated Bias Supplies + Isolated Amplifier Combo for Line Voltage or Current Measurement

TIDesigns

(ACTIVE) PMP9480

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Description

PMP9480 is a dual output Flybuck Converter plus an Isolated amplifier combo solution that can not only be used for sensing Line voltage or Line current but also provide Aux Bias power for complete Industrial system . The design accepts very Wide input voltage of 10 Vin to 72Vin DC(Work on any Batteries such as 12V/24V or 48V or any available Industrial DC bus) and provides Isolated outputs of 5V@350mA(Primary Bias Supply for Controller , Amplifiers ,Interfaces, etc) and 5V@150mA(Secondary Isolated Bias for Isolated Amplifiers , Isolated communication etc) . It features a small size and is an inexpensive and more efficient solution to using Flyback or Pushpull converters . Isolated Amplifier AMC1200 used in this design is a precision isolation amplifier with an output separated from the input circuitry by a silicon dioxide (SiO2) barrier that is highly resistant to magnetic interference.

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Features

- Simple, low-BOM-count, and low-cost design
- No External Loop Compensation
- Off the Shelf Magnetics
- Accurate Current or Voltage Measurement with Isolation
- Transient Protection with no Clamping Circuitry
- Remove the need for External Adapters in Industrial Systems

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

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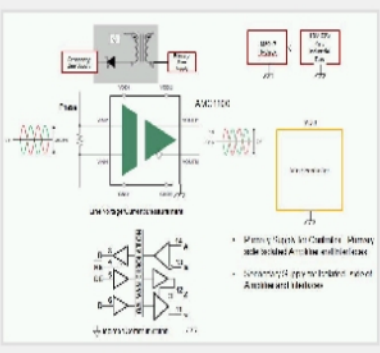
Schematic/Block Diagram

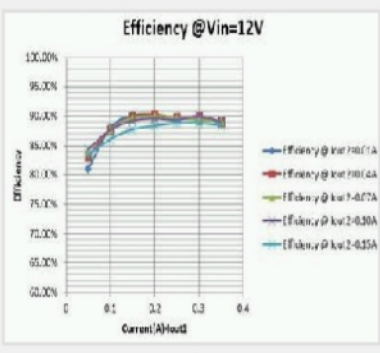
Quickly understand overall system functionality.



Download Schematic

Test Data

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



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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

	PMP9480
Vin (Max) (V)	72
Vin (Min) (V)	10
Vout (Nom) (V)	5.5
Iout (Max) (A)	.35
Output Power	1.925
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Buck- Synchronous

TI Devices (3)

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
AMC1100	4.25kV peak Isolated Amplifier for Current Shunt Measurements	Amplifiers and Linear	Sample & Buy	View Design Kits & Evaluation Modules
AMC1200	4.25kV peak Isolated Amplifier for Current Shunt Measurements	Amplifiers and Linear	Sample & Buy	View Design Kits & Evaluation Modules
LM5017	7.5-100V Wide Vin, 600mA Constant On-Time Synchronous Buck Regulator	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
AMC1200	SOP (DUB) | 8	Download	-
LM5017	HSOP (DDA) | 8	Download	Download
	WSON (NGU) | 8	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.

- read more -

Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9480 Test Results		PDF	2854	24 Nov 2014	18

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9480 Gerber		ZIP	190	24 Nov 2014	11
PMP9480 BOM		PDF	23	24 Nov 2014	14
PMP9480 Schematic		PDF	97	24 Nov 2014	42

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