10.8Vin~13.2Vin, 5Vout @ 300mA, Isolated Self-Driven Synchronous Flyback Converter Reference Design

(ACTIVE) PMP9291

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Key Document

- PMP9291 Test Results (Rev. A) (PDF 1130 KB)
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PMP9291 10.8Vin~13.2Vin, 5Vout @ 300mA, Isolated Self-Driven Synchronous Flyback Converter Reference Design Board Top View

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

Description

An isolated flyback converter with self-driven synchronous rectification on the secondary side accepts an input voltage of 10.8Vin to 13.2Vin and provides an isolated output of 5Vout capable of supplying a maximum of 0.3A of current to the load.

Features

- Excellent regulation 4.9Vout ± 3.1% over entire line and load range without opto or discrete Vref
- No need for pre-load on isolated output, without output voltage rise at light load
- Improved load regulation, smaller voltage droop at heavy load
- LM5017 wide Vin range 7.5V to 100V
- Easy-to-design, cost effective Fly-Buck solution
- Constant On-Time control, no loop compensation required

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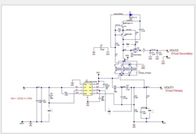
Schematic/Block Diagram

Quickly understand overall system functionality.



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Test Data

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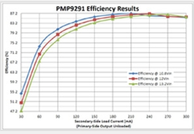

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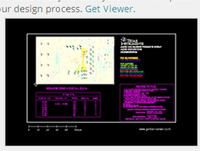
Design Files

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

	PMP9291
Vin (Min) (V)	10.8
Vin (Max) (V)	13.2
Vout (Nom) (V)	5
Iout (Max) (A)	.3
Output Power (W)	1.5
Isolated/Non-isolated	Isolated
Input Type	DC
Topology	Flyback

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
CSD17507Q5A	30V N-Channel High Side NexFET Power MOSFET with 20 Volt Vgs	Power MOSFET	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)
CSD17507Q5A	VSONP (DQJ) | 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.

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Technical Documents

User guides (1)

Title	Abstract	Type	Size (KB)	Date	Views	TI Recommends
PMP9291 Test Results (Rev. A)		PDF	1130	29 Sep 2015	12	✓

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9291 Gerber		ZIP	244	29 Sep 2015	4
PMP9291 CAD Files		ZIP	415	29 Sep 2015	8
PMP9291 PCB		PDF	691	29 Sep 2015	4
PMP9291 BOM (Rev. A)		PDF	122	29 Sep 2015	16
PMP9291 Schematic (Rev. A)		PDF	292	29 Sep 2015	30

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