Reference Design - TPS54623 Synchronous Buck Converter with Vin=4.5V-17V, Vout=3.3V, Iout=5A

(ACTIVE) PMP10774

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Description

This synchronous buck converter design uses the TPS54623 to generate a 3.3V at 5A rail from a 4.5V-17Vdc source. The current mode control and high switching frequency of the device minimize the component count and size, resulting in a simple design. This supply achieves a peak efficiency of 96%.

Features

- Skips pulses to boost the efficiency at light loads
- Low component count and size reduces total footprint of design
- Peak efficiency of 96%
- Full design, layout, and test report

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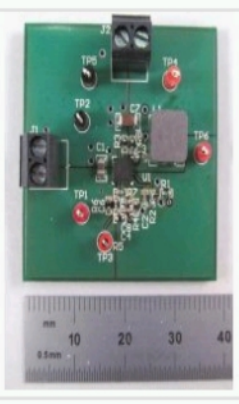

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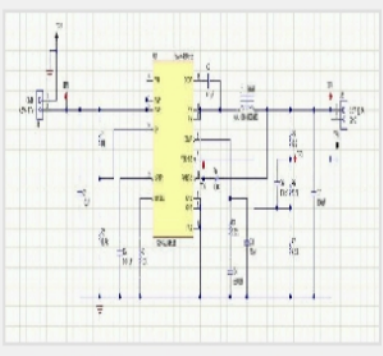
Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Schematic/Block Diagram

Quickly understand overall system functionality.



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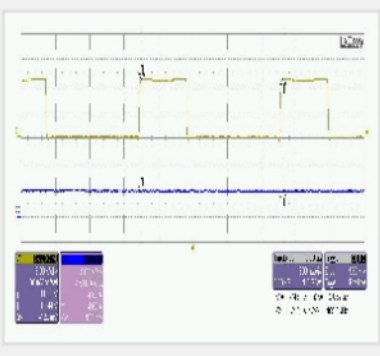
Test Data

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

	PMP10774
Vin (Min) (V)	4.5
Vin (Max) (V)	17
Vout (Nom) (V)	3.3
Iout (Max) (A)	5
Output Power	16.5
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
TPS54623	4.5V to 17V Input, 6A Synchronous Step-Down SWIFT Converter with Light Load Efficiency	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS54623	VQFN (RHL) | 14	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
PMP10774 Test Results		PDF	485	16 Jan 2015	0

Design Files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10774 Assembly Drawing		PDF	378	16 Jan 2015	0
PMP10774 BOM		PDF	163	16 Jan 2015	0
PMP10774 Schematic		PDF	153	16 Jan 2015	0

Related Tools & Software

Software (1)

PMP10774 Gerber
(ZIP, 1076 KB) 16 Jan 2015

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