85-265Vin, 5Vout, 1Aout, AC-DC Fly-Buck Converter Reference Design

(ACTIVE) PMP10834

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Key Document

PMP10834 Test Results (PDF 1214 KB)
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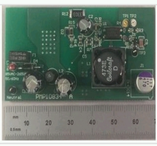

PMP10834 85-265Vin, 5Vout, 1Aout, AC-DC Fly-Buck Converter Reference Design Top of Board

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

Description

The PMP10834RevA reference design is a compact and thermally efficient design intended to step down a wide range of AC inputs (85VAC to 265VAC). This non-isolated Flyback design incorporates the UCC28C42 PWM with an optocoupler feedback to provide 1% output voltage regulation. All the circuit components (including magnetics) are standard parts.

Features

- Non-isolated AC-DC 5V/1A Flyback converter.
- Less than 45 degree C temperature rise on all parts.
- 1% output voltage regulation accuracy.
- Utilize all standard components (including magnetics).
- Compact board size with 1.4" W x 2.7" L.
- Test report available.

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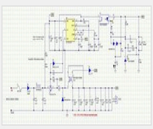
Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

Design Guide

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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Parametrics

	PMP10834
Vin (Min) [V]	85
Vin (Max) [V]	265
Vout (Nom) [V]	5
Iout (Max) [A]	1
Output Power	5
Isolated/Non-Isolated	Isolated
Input Type	AC
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
TL431A	Adjustable Precision Shunt Regulator	Voltage Reference	Sample & Buy	Not Available
UCC28C45	BiCMOS Low-Power Current Mode PWM Controller	AC/DC and Isolated DC/DC Power Supply	Sample & Buy	Not Available

CAD/CAE symbols

Part #	Package | Pins	CAD File [.bxl]	STEP Model [.stp]
TL431A	SOT (DBZ) | 3	Download	Download
	TO-92 (LP) | 3	Download	Download
	SIP (PK) | 3	Download	-
	SOT (DBV) | 5	Download	Download
	SOT (DCK) | 6	Download	Download
	SOIC (D) | 8	Download	Download
	PDIP (P) | 8	Download	Download
	SOP (PS) | 8	Download	-
	TSSOP (PW) | 8	Download	Download
UCC28C45	SOIC (D) | 8	Download	Download
	VSSOP (DGK) | 8	Download	Download
	PDIP (P) | 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
PMP10834 Test Results		PDF	1214	16 Jul 2015	8	✓

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10834 Gerber		ZIP	388	16 Jul 2015	2
PMP10834 Altium		ZIP	1285	16 Jul 2015	3
PMP10834 Assembly Drawing		PDF	99	16 Jul 2015	4
PMP10834 BOM		PDF	131	16 Jul 2015	6
PMP10834 Schematic		PDF	263	16 Jul 2015	19

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