Primary-Side Regulated Flyback with 85-265VAC Input, high output energy storage for long hold up out

(ACTIVE) PMP8930.3

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Description

The PMP8930 reference design uses the UCC28710 primary-side regulated flyback controller to generate a 20V output from a univeral AC input. a bulk capacitor with slow-charge-fast-discharge circuit is placed at flyback output to provide long hold up time for the following step-down DC-DC stages. TPS54335 is used as the controller and power stage for the main 4V or 12V output. The valley switching of the UCC28710 allows this low-cost design to achieve a maximum load efficiency of 83%; no load losses are less than 70mW.

Top of Board | Regulated Flyback Converter Reference Design

TI Devices (4)

Get more information on the TI products in this reference design.

Part Number	Name	Product Family
LM2903	Dual Differential Comparator	Amplifiers and Linear
LM317	3/4 Pin 1.5A Adjustable Positive Voltage Regulator	Linear Regulator (LDO)
TPS54335	4.5V to 28V Input, 3A, Synchronous, Step-Down Converter with Eco-mode	Converter (Integrated Switch)

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Bill of Materials

Find the complete list of components in this reference design.

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CAD/CAE Symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
LM2903	SOIC (D) | 8	Download	Download
	VSSOP (DGK) | 8	Download	Download
	PDIP (P) | 8	Download	Download
	SOP (PS) | 8	Download	-
	TSSOP (PW) | 8	Download	-
LM317	TO-220 (KC) | 3	Download	-
	TO-220 (KCS) | 3	Download	-
	(KTE) | 3	Download	-
	TO-263 (KTT) | 3	Download	Download
	SOT (DCY) | 4	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 (2)

Title	Abstract	Type	Size (KB)	Date	Views
PMP8930.3 Test Results		PDF	1563	12 Sep 2013	24
PMP8930.1 Test Results		PDF	1563	12 Sep 2013	58

More Literature (4)

Title	Abstract	Type	Size (KB)	Date	Views
PMP8930.3 BOM		PDF	120	12 Sep 2013	25
PMP8930.3 Schematic		PDF	133	12 Sep 2013	23
PMP8930.1 BOM		PDF	120	12 Sep 2013	61
PMP8930.1 Schematic		PDF	133	12 Sep 2013	159

Related Tools & Software

Software (1)

PMP8930.1 Gerber
(ZIP, 233 KB) 32 views, 12 Sep 2013

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Power Tip 58: Power supply grounding; which camp are you in?

In this power tip video senior applications engineer, Robert Kollman, discusses different methods for grounding power supply.

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