Powering PLC I/O Module with LM5017 Flybuck

(ACTIVE) PMP7993.1

TIDesigns

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Description

The LM5017 Flybuck reference design provides multiple isolated outputs to supply the bias voltage needed in a PLC I/O module. It generates 4 isolated outputs: ±15V@50mA and ±5V@100mA; it can cover most of the required voltage rails in the I/O module, such as the OP-AMP, DAC bias, RS-485 transmitter and digital isolator power supplies. In the Flybuck, the regulation is done on the primary side, and thus no opto-coupler is needed. The overall load/line regulation for each output is within +/-5%. The input voltage range is from 17V to 32V.

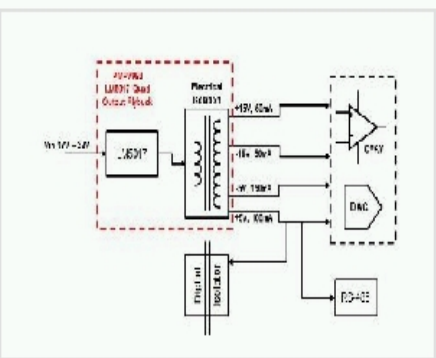
Flybuck Quad Isolated Output Power Supply without Opto-coupler

Features

- Ideal for PLC I/O modules, or industrial applications requiring multiple bias supplies
- Quad isolated outputs, +/-15V@50mA, +/-5V@100mA
- 17-32V suggested operating range
- 9-100V input voltage capability with LM5017
- +/-5% Vout regulation accuracy across line and load variations
- Tested and supported with design files, reference board available upon request

Schematic/Block Diagram

Quickly understand overall system functionality.



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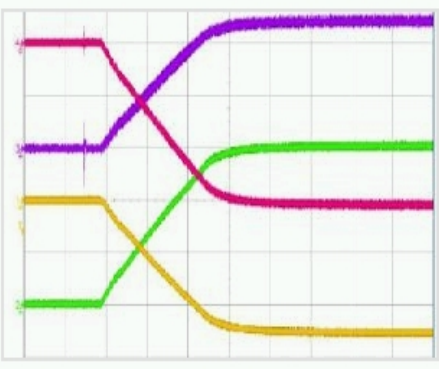

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Design Files

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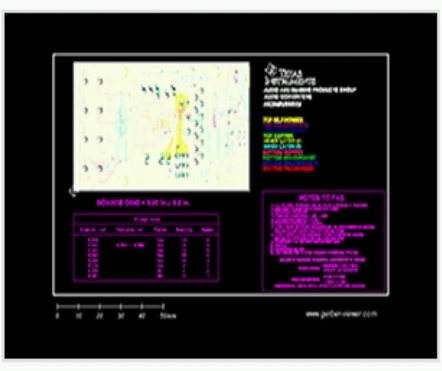

Download Design File

TI Devices (1)

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

Part Number	Name	Product Family
LM5017	100V, 600mA Wide Vin Constant On-Time Synchronous Buck Regulator	Power Supply Support

Bill of Materials

Find the complete list of components in this reference design.

Download BOM

CAD/CAE Symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
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 (2)

Title	Abstract	Type	Size (KB)	Date	Views
PMP7993.1 PCB		PDF	205	12 Sep 2013	33
PMP7993.1 Test Results		PDF	884	12 Sep 2013	37

More Literature (2)

Title	Abstract	Type	Size (KB)	Date	Views
PMP7993.1 BOM		PDF	24	12 Sep 2013	55
PMP7993.1 Schematic		PDF	121	12 Sep 2013	77

Related Tools & Software

Software (1)

PMP7993.1 Gerber
(ZIP, 179 KB) 29 views, 12 Sep 2013

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Videos

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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