4-20 mA Loop Sensor Isolated Power Supply

(ACTIVE) PMP10977

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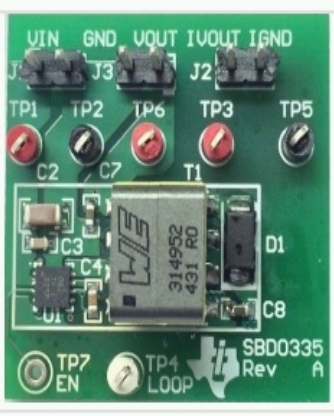

Description

The TPS54061 is used in a buck topology with an auxillary winding providing power to the primary side and isolated side of a isolated system. The high efficiency of this topology provides more output current from a system powered from a current limited input source. The isolated output is post regulated with an LDO for best regulation.

Features

- Synchronous buck for high integration and high efficiency
- 60-V wide input voltage range
- 90-µA non-switching input current
- Auxillary winding provides a highly efficient low current isolated output
- Built and tested circuit and PCB design

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

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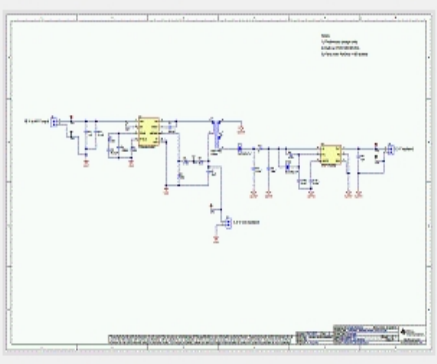
Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

Test Data

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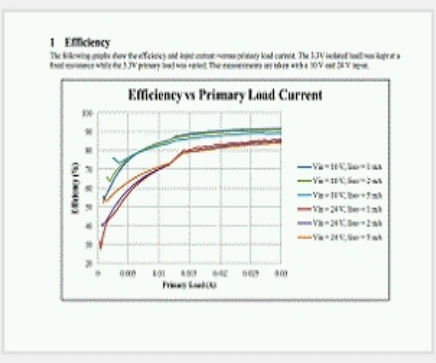

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Design Files

Download ready-to-use system files to speed your design process. Get Viewer.

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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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
TPS54061	Wide Input 60V, 200mA Synchronous Step-Down DC-DC Converter with Low IQ	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules
TPS717	Single Output LDO, 150mA, Fixed (3.0V), High PSRR, Low Quiescent Current, Low Noise	Linear Regulator (LDO)	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS717	SOT (DCK) | 5	Download	Download
	WSON (DRV) | 6	Download	-
	WSON (DSE) | 6	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
PMP10977 Test Results		PDF	438	05 Mar 2015	0

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10977 BOM (Rev. A)		PDF	211	22 Apr 2015	0
PMP10977 Schematic (Rev. A)		PDF	186	22 Apr 2015	0
PMP10977 Altium		ZIP	1422	05 Mar 2015	0
PMP10977 PCB		PDF	366	05 Mar 2015	0
PMP10977 Assembly Drawing		PDF	91	05 Mar 2015	0

Applications

- Field Actuators: Hydraulic Valves
- Flow Transmitter
- Portable Wireless Sensor System
- Pressure Transmitter
- Process Analytics (pH, Gas, Concentration, Force & Humidity)
- Temperature Transmitter

Support & Community

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