Low Profile Triple Output Isolated Fly-Buck Power Supply for Industrial Applications - Ref Design

TIDesigns

(ACTIVE) PMP10558.5

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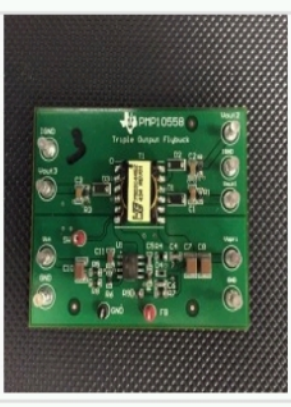

Low Profile Triple Output Isolated Fly-Buck Power Supply - Top

Description

The PMP10558.5 reference design is a low profile triple output isolated Fly-Buck power supply for industrial applications. The power supply has a synchronous buck regulator, LM5017, and a low profile (6mm) transformer. It generates three isolated outputs depending on the transformer selection. The LM5017 is a 100V wide Vin, 600mA synchronous buck regulator. The input voltage range of the design is 18V to 30V, making it suitable for 24V input industrial applications. The Fly-Buck can regulate the secondary side outputs without an opto-coupler or auxillary winding and is capable of achieving good cross regulation within ±5%. With LM5017's constant on-time control, no loop compensation is required, which simplifies the design and helps reduce the external part count and BOM cost.

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

Features

- Vin: 18V to 42V
- 4 layer board (1 oz. copper on top and bottom, 1/2 oz. on middle two layers)
- Board dimensions: 3.2" x 1.6"
- Good thermal performance and efficiency

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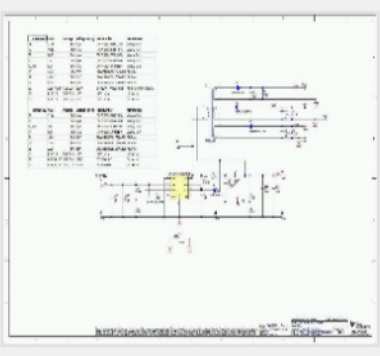
Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

Test Data

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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.

Download BOM

Parametrics

	PMP10558.5
Vin (Max) (V)	30
Vin (Min) (V)	18
Vout (Nom) (V)	24
Iout (Max) (A)	.025
Output Power	.6
Isolated/Non-Isolated	Isolated
Input Type	DC
Topology	Flybuck

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
LM5017	7.5-100V Wide Vin, 600mA Constant On-Time Synchronous Buck Regulator	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules

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.

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10558 Test Results		PDF	3534	13 Jan 2015	4

Design Files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP10558 CAD Files		ZIP	338	13 Jan 2015	3
PMP10558 Gerber		ZIP	69	13 Jan 2015	3
PMP10558 PCB		PDF	438	13 Jan 2015	5
PMP10558 BOM		PDF	243	13 Jan 2015	5
PMP10558 Schematic		PDF	175	13 Jan 2015	7

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