Class 3 Efficiency-Optimized Flyback Converter for PoE Applications Reference Design

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Description

This converter is used for Class 3 PoE applications where high efficiency is required. The flyback converter with synchronous rectifier provides excellent efficiency and small size for PoE applications. The TPS23753A contains both the PoE Powered Device and the PWM controller functions.

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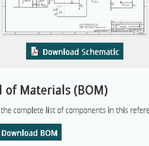
Flyback Converter for PoE Applications

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

Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

Test Data

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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Parametrics

	PMP8896
Vin (Max) (V)	57
Vin (Min) (V)	36
Vout (Nom) (V)	5
Iout (Max) (A)	2
Output Power	10
Isolated/Non-Isolated	Isolated
Input Type	DC
Topology	Flyback- Synchronous POE

TI Devices (3)

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
CSD17527Q5A	30V, N-Channel NexFET™ Power MOSFETs	Power MOSFET	Sample & Buy	View Design Kits & Evaluation Modules
TLV431	Low-Voltage Adjustable Precision Shunt Regulator	Voltage Reference	Sample & Buy	Not Available
TPS23753A	IEEE 802.3-2005 PoE Interface and Isolated Converter Controller with Enhanced ESD Ride-Through	Power Over Ethernet (PoE)/LAN Solutions	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
CSD17527Q5A	VSONP (DQJ) | 8	Download	-
TLV431	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
TPS23753A	TSSOP (PW) | 14	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
PMP8896 Test Results		PDF	273	16 Sep 2013	57

Design Files (2)

Title	Abstract	Type	Size (KB)	Date	Views
PMP8896 BOM		PDF	114	16 Sep 2013	28
PMP8896 Schematic		PDF	49	16 Sep 2013	106

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