High Density Isolated 18-60Vin 5V 2.5A Flyback Using Standard PoE Transformer Reference Design

(ACTIVE) PMP11012

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PMP11012 Top of Board

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

Description

PMP11012 is a fully isolated 5V at up to 2.5A delivered from a wide 18 -60 VDC input range. The PMP11012 design is complete on 2 layer PCB, all parts on one side and with no forced air needed. Transformer is standard off the shelf 13 W POE type. Design includes schematic, BOM and layout Gerbers and is well supported with a detail Test report.

Features

- Full input to output isolation
- Discontinuous mode flyback with standard POE transformer
- Very wide input range of 18V to 60V
- Thermal performance without fan well documented
- 2 layer PCB with all parts on same side for cost sensitive applications
- Schematic, BOM, layout and Test Report focusing on thermal performance & efficiency

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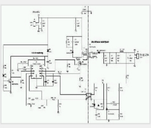
Schematic/Block Diagram

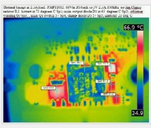
Quickly understand overall system functionality.



Download Schematic

Test Data

Get results faster with test and simulation data that's been verified.



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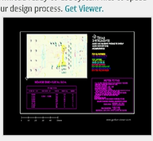
Design Files

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



Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP11012
Vin (Min) [V]	18
Vin (Max) [V]	60
Vout (Nom) [V]	5
Iout (Max) [A]	2.5
Output Power	12.5
Isolated/Non-Isolated	Isolated
Input Type	DC
Topology	Flyback- DCM Flyback- Non Sync

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
TL431	Adjustable Precision Shunt Regulator	Voltage Reference	Sample & Buy	Not Available
TPS40210	Wide Input Range Current Mode Boost Controller	Controller (External Switch)	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File [.bxl]	STEP Model [.stp]
TL431	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
	SOIC (D) | 8	Download	Download
	PDIP (P) | 8	Download	Download
	SOP (PS) | 8	Download	-
	TSSOP (PW) | 8	Download	Download
TPS40210	HVSSOP (DGQ) | 10	Download	-
	VSON (DRC) | 10	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 (1)

Title	Abstract	Type	Size [KB]	Date	Views
PMP11012 Test Results		PDF	2265	14 Apr 2015	0

Design files (4)

Title	Abstract	Type	Size [KB]	Date	Views
PMP11012 Gerber (from PMP5040)		ZIP	112	14 Apr 2015	0
PMP11012 PCB (from PMP5040)		PDF	56	14 Apr 2015	0
PMP11012 BOM		PDF	30	14 Apr 2015	0
PMP11012 Schematic		PDF	29	14 Apr 2015	0

Applications

- Process Analytics (pH, Gas, Concentration, Force & Humidity)

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