AC Input, 6 Channel LED Strings with 30W Output Reference Design

(ACTIVE) PMP4484.6

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Key Document

- PMP4484 Test Results (PDF 869 KB)
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PMP4484.6 AC Input, 6 Channel LED Strings with 30W Output Reference Design Board image

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

Description

The PMP4484 is a power reference design with AC input. It is a isolated LED driver, provides 6 channel LED outputs with PWM dimming. It implements a high PF flyback controller UCC28810 to output DC 40V, the Constant Current Buck LED Driver LM3414HV downs the voltage to 30V to drive LED. The degisn also provides 3.3Vo to MCU by the buck conller LMR16006, and a 10Vo to RS485. The system achieves high efficiency and high PF.

Features

- Isolated single stage Flyback and Buck togology
- 6 channel LED outputs with PWM dimming
- include 3.3Vo for MCU and 10Vo for RS485 power supply
- High efficiency, 86.4% at 230Vac input
- High PF, 0.939 at 230Vac input
- Size: 300mmX22mmx22mm

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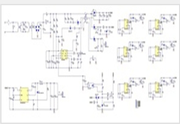
Schematic/Block Diagram

Quickly understand overall system functionality.



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Design Guide

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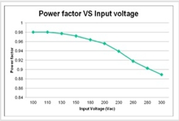

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Design Files

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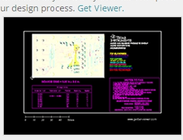

Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP4484.6
Vin (Min) (V)	40
Vin (Max) (V)	40
Vout (Nom) (V)	30
Iout (Max) (A)	.14
Output Power (W)	4.2
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Buck- Non Sync

TI Devices (4)

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
LM3414HV	60W Common Anode Capable Constant Current Buck LED Driver Requires No Ext. Current Sensing Res	LED Driver	Sample & Buy	View Design Kits & Evaluation Modules
LMR16006	SIMPLE SWITCHER® 4V to 60V, 600mA Step-Down Regulator with Low Iq	Converter (Integrated Switch)	Sample & Buy	View Design Kits & Evaluation Modules
TL431A	Adjustable Precision Shunt Regulator	Voltage Reference	Sample & Buy	Not Available

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CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
LM3414HV	HSOP (DDA) | 8	Download	Download
	WSON (NGQ) | 8	Download	Download
TL431A	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
UCC28810	SOIC (D) | 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	TI Recommends
PMP4484 Test Results		PDF	869	12 Oct 2015	9	✓

Design files (3)

Title	Abstract	Type	Size (KB)	Date	Views
PMP4484 Altium		ZIP	588	12 Oct 2015	4
PMP4484 BOM		PDF	278	12 Oct 2015	10
PMP4484 Schematic		PDF	738	12 Oct 2015	28

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