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

(ACTIVE) PMP4484.3

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## Key Document

- PMP4484 Test Results (PDF 869 KB)
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PMP4484.3 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 coniler 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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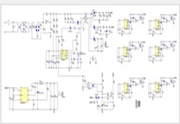
## Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

## Design Guide

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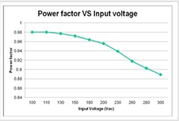


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## Design Files

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.

Download BOM

## Parametrics

| | PMP4484.3 |
|---|---|
| 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 |
| | SO/C (D) \| 8 | Download | Download |
| | PDIP (P) \| 8 | Download | Download |
| | SOP (PS) \| 8 | Download | - |
| | TSSOP (PW) \| 8 | Download | Download |
| UCC28810 | SO/C (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.

- read more -

## 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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