

# Ten Output QR Flyback and Buck Converter Reference Design

(ACTIVE) PMP10822.8

Description & Features

Technical Documents

Support & Community

Order Now

View the [Important Notice for TI Designs](#) covering authorized use, intellectual property matters and disclaimers.

## Key Document

[PMP10822 Test Results](#) (PDF 2148 KB)  
16 Jul 2015 5 views

[View All Technical Documents](#) (5)

## Description

The PMP10822 reference design utilizes two QR flyback, and four buck converters. The efficiency for the 12V and 24V flyback approaches 87%, while the 16V buck converter has efficiency greater than 89%.

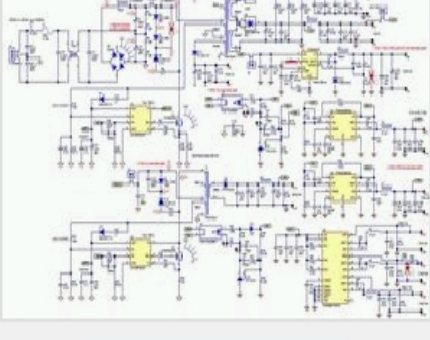
## Features

- The 12V and 24V flyback converter's efficiency approaches 87% at full load, with an input of 120VAC
- The 16V buck converter's efficiency is greater than 89% at full load, with a 24V input
- Board length is approximately 3.45" x 4.95"
- Test report is available

TI's [Standard Terms and Conditions for Evaluation Modules](#) apply.

## Schematic/Block Diagram

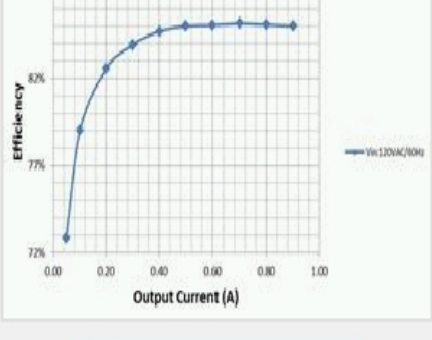
Quickly understand overall system functionality.



Download Schematic

## Design Guide

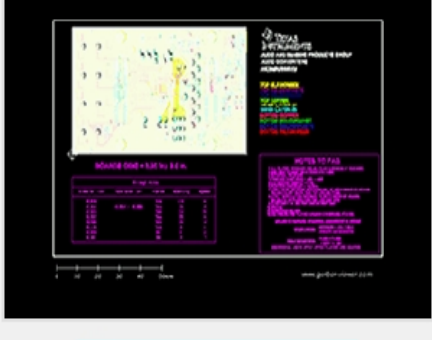
Get results faster with test and simulation data that's been verified.



Download Design Guide

## 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

|                       | PMP10822.8        |
|-----------------------|-------------------|
| Vin (Min) (V)         | 10                |
| Vin (Max) (V)         | 14                |
| Vout (Nom) (V)        | 3.3               |
| Iout (Max) (A)        | .2                |
| Output Power          | .66               |
| Isolated/Non-Isolated | Non-Isolated      |
| Input Type            | DC                |
| Topology              | Buck- Synchronous |

## TI Devices (5)

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                          |
|--------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------|-----------------------------------------------------------|
| <a href="#">ATL431</a>   | 2.5V Low Iq Adjustable Precision Shunt Regulator                                                    | Voltage Reference                     | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |
| <a href="#">TPS5402</a>  | 3.5V to 28V Input, 1.7A Output, Non-Synchronous Step-Down Regulator with Integrated MOSFET          | Converter (Integrated Switch)         | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |
| <a href="#">TPS54239</a> | 4.5V to 23V Input, 2A Synchronous Step-Down Converter with D-CAP2 Mode                              | Converter (Integrated Switch)         | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |
| <a href="#">TPS65581</a> | 4.5 to 18V Input, 2.5A/1.5A/1.5A Triple Sync. Step-Down Converter w/ Advanced D-CAP2™ and Eco-mode™ | Power Management                      | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |
| <a href="#">UCC28740</a> | Constant-Voltage, Constant-Current Flyback Controller Using Opto-Coupler Feedback                   | AC/DC and Isolated DC/DC Power Supply | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |

[Show More](#)

## CAD/CAE symbols

| Part #                  | Package   Pins                | CAD File (.bxl)          | STEP Model (.stp)        |
|-------------------------|-------------------------------|--------------------------|--------------------------|
| <a href="#">ATL431</a>  | <a href="#">SOT (DBZ)   3</a> | <a href="#">Download</a> | <a href="#">Download</a> |
| <a href="#">TPS5402</a> | <a href="#">SOIC (D)   8</a>  | <a href="#">Download</a> | <a href="#">Download</a> |

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     |
|---------------------------------------|----------|------|-----------|-------------|-------|-------------------|
| <a href="#">PMP10822 Test Results</a> |          | PDF  | 2148      | 16 Jul 2015 | 5     | <a href="#">✓</a> |

## Design files (4)

| Title                                     | Abstract | Type | Size (KB) | Date        | Views |
|-------------------------------------------|----------|------|-----------|-------------|-------|
| <a href="#">PMP10822 Gerber</a>           |          | ZIP  | 617       | 16 Jul 2015 | 2     |
| <a href="#">PMP10822 Assembly Drawing</a> |          | PDF  | 89        | 16 Jul 2015 | 6     |
| <a href="#">PMP10822 BOM</a>              |          | PDF  | 174       | 16 Jul 2015 | 14    |
| <a href="#">PMP10822 Schematic</a>        |          | PDF  | 244       | 16 Jul 2015 | 39    |

## Support & Community

## TI E2E™ community

TI E2E™ Community

As a member of [my.TI](#) you can join the [TI E2E™ Community](#) where you can ask questions, share ideas and collaborate with fellow engineers and TI experts

Contents are provided "AS IS" by the respective TI and Community contributors and do not constitute TI specifications. See [Terms of use](#).

Engage in the Community

• [Amplifiers](#)

• [Broadband RF/IF & Digital Radio](#)

• [Clocks & Timers](#)

• [Data Converters](#)

• [DLP® & MEMS](#)

• [Interface](#)

• [Logic](#)

• [Power Management](#)

• [Wireless Connectivity](#)

## Wikis

[Visit the TI Wiki](#)

## Other Support

- [TI E2E Community](#)
- [Contact Technical Support](#)

## Your History

Products You Recently Viewed

There are no items in your history.

About TI | Careers | Contact us | Corporate Citizenship | Investor Relations | University

Mobile apps | Mobile site | myTI account | TI worldwide | Website feedback

TI is a global semiconductor design and manufacturing company. Innovate with 100,000+ analog ICs and embedded processors, along with software, tools and the industry's largest sales/support staff.

© Copyright 1995-2015 Texas Instruments Incorporated. All rights reserved.  
Trademarks | Privacy policy | Terms of use | Terms of sale

f

t

i

g+

myTI

ecia

MEMBER