

400VDC Input to 28V/9A Output Compact, High Efficiency CLL Resonant Converter Reference Design

(ACTIVE) PMP9750

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

PMP9750 Test Results (PDF 1291 KB)  
20 Oct 2015 153 views

» View All Technical Documents (7)

Description

PMP9750 is a CLL resonant converter reference design with 400VDC input and 28V/9A output. Unlike LLC series resonant converter, CLL resonant converter used in PMP9750 utilizes its output inductor to minimize the size of the resonant tank. With resonant controller UCC25600 and bridge driver UCC27714, PMP9750 is able to achieve 95.7% peak efficiency.

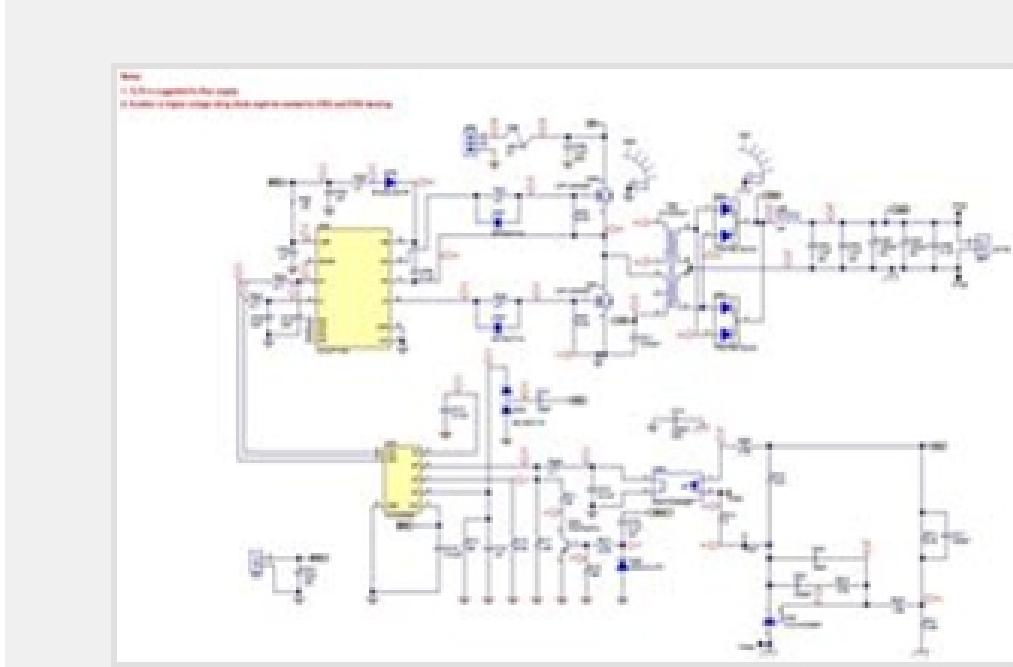
Features

- 400VDC input to 28V/9A output
- Utilize compact, high efficiency CLL resonant converter
- Test data included
- Board dimension: W x L x H = 2.05" x 3.8" x 1.21"
- Achieve 95.7% peak efficiency

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

Schematic/Block Diagram

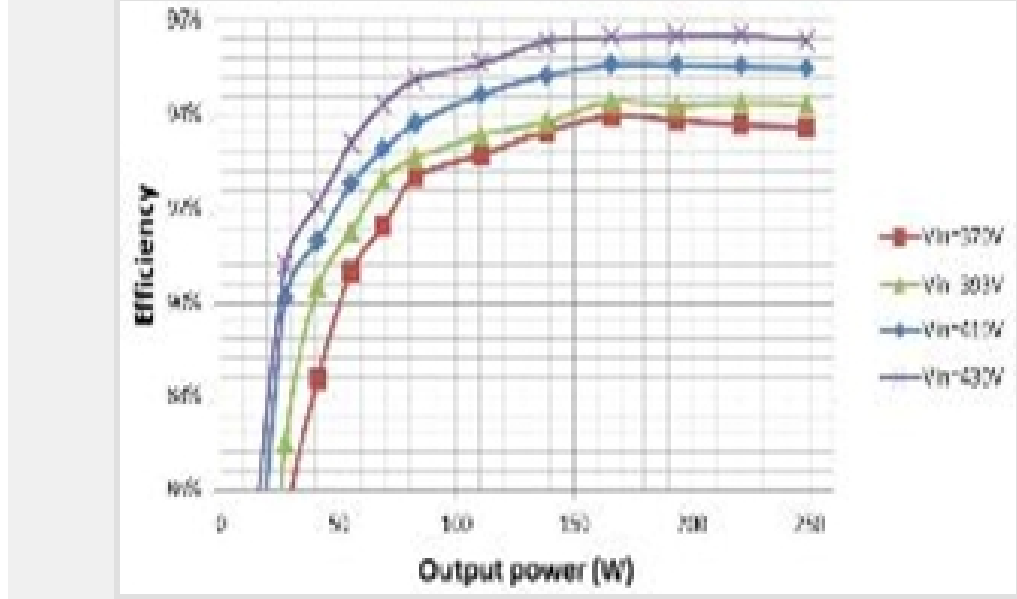
Quickly understand overall system functionality.



Download Schematic

Design Guide

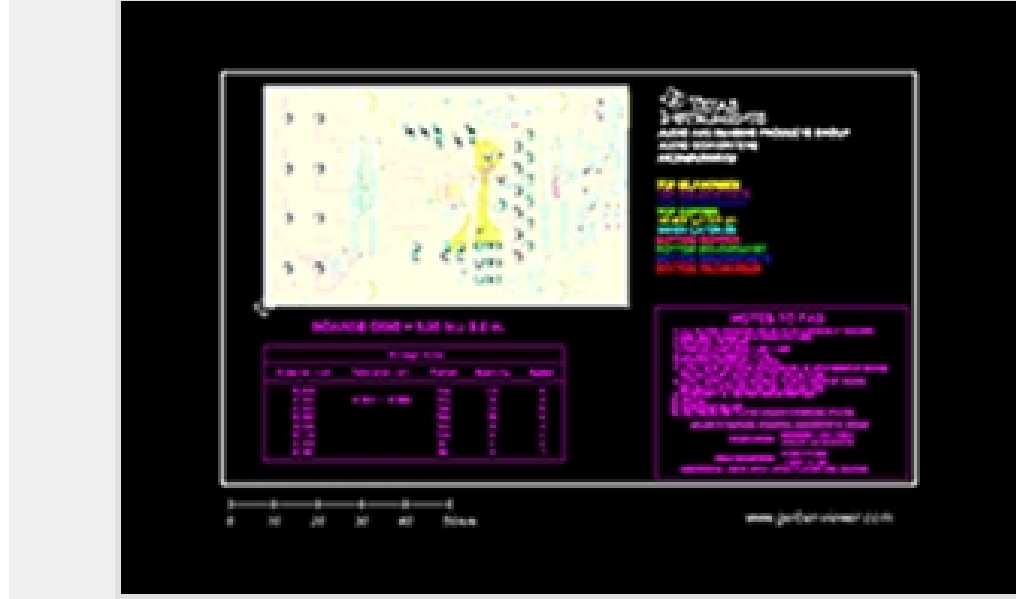
Get results faster with test and simulation data that's been verified.



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

|                       | PMP9750               |
|-----------------------|-----------------------|
| Vin (Min) (V)         | 350                   |
| Vin (Max) (V)         | 400                   |
| Vout (Nom) (V)        | 28                    |
| Iout (Max) (A)        | 9                     |
| Output Power (W)      | 252                   |
| Isolated/Non-Isolated | Isolated              |
| Input Type            | DC                    |
| Topology              | Half Bridge- Resonant |

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                          |
|-------------|-------------------------------------------------------|-------------------------------------------------------|----------------------------------|-----------------------------------------------------------|
| TL431A      | Adjustable Precision Shunt Regulator                  | Voltage Reference                                     | <a href="#">Sample &amp; Buy</a> | Not Available                                             |
| UCC25600    | 8-Pin High-Performance Resonant Mode Controller       | Offline and Isolated DC/DC Controllers and Converters | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |
| UCC27714    | High-Speed, 4-A, 600-V High-Side Low-Side Gate Driver | MOSFET and IGBT Gate Drivers                          | <a href="#">Sample &amp; Buy</a> | <a href="#">View Design Kits &amp; Evaluation Modules</a> |

CAD/CAE symbols

| Part #   | Package   Pins                 | CAD File (.bxl)          | STEP Model (.stp)        |
|----------|--------------------------------|--------------------------|--------------------------|
| TL431A   | <a href="#">SOT (DBZ)   3</a>  | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">TO-92 (LP)   3</a> | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">SIP (PK)   3</a>   | <a href="#">Download</a> | -                        |
|          | <a href="#">SOT (DBV)   5</a>  | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">SOT (DCK)   6</a>  | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">SOIC (D)   8</a>   | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">PDIP (P)   8</a>   | <a href="#">Download</a> | <a href="#">Download</a> |
|          | <a href="#">SOP (PS)   8</a>   | <a href="#">Download</a> | -                        |
|          | <a href="#">TSSOP (PW)   8</a> | <a href="#">Download</a> | <a href="#">Download</a> |
| UCC25600 | <a href="#">SOIC (D)   8</a>   | <a href="#">Download</a> | <a href="#">Download</a> |
| UCC27714 | <a href="#">SOIC (D)   14</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="#">PMP9750 Test Results</a> |          | PDF  | 1291      | 20 Oct 2015 | 153   | ✓             |

Design files (6)

| Title                                    | Abstract | Type | Size (KB) | Date        | Views |
|------------------------------------------|----------|------|-----------|-------------|-------|
| <a href="#">PMP9750 Gerber</a>           |          | ZIP  | 480       | 20 Oct 2015 | 29    |
| <a href="#">PMP9750 Altium</a>           |          | ZIP  | 742       | 20 Oct 2015 | 47    |
| <a href="#">PMP9750 PCB</a>              |          | PDF  | 420       | 20 Oct 2015 | 52    |
| <a href="#">PMP9750 Assembly Drawing</a> |          | PDF  | 74        | 20 Oct 2015 | 52    |
| <a href="#">PMP9750 BOM</a>              |          | PDF  | 140       | 20 Oct 2015 | 79    |
| <a href="#">PMP9750 Schematic</a>        |          | PDF  | 162       | 20 Oct 2015 | 212   |

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

- [PMP10223.2](#)
- [PMP10223.1](#)
- [PMP10866.3](#)
- [PMP10866.2](#)
- [PMP10866.1](#)

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 | Cookie policy | Terms of use | Terms of sale

f

t

in

&

+

ecia  
MEMBER