105 to 440VAC Input, 24V/400 & 5V/20mA Output Low Cost & Compact Bias Supply Reference Design

(ACTIVE) PMP11090.2

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Key Document

- PMP11090 Test Results (PDF 1663 KB)
  26 Aug 2015 20 views

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PMP11090.2 105 to 440VAC Input, 24V/400 & 5V/20mA Output Low Cost & Compact Bias Supply Reference Design Top of Board Image

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

Description

The PMP11090 reference design is a compact and thermally efficient design intended to step down a wide range of AC inputs (105VAC to 440VAC). This non-isolated Buck design incorporates the UCC28710 PSR controller and TLV70450DBVT LDO. The PMP11090RevA board are designed with complete standard components (including magnetics).

Features

- 105VAC to 440VAC, 50/60Hz input 24V/400mA and 5V/20mA outputs
- Less than 60 degree C temperature rise on all parts
- 1% output voltage regulation accuracy
- Utilize all standard components (including magnetics)
- Compact board size with 25mm W x 45mm L
- Test report available

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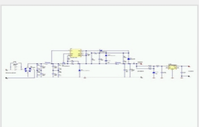
Schematic/Block Diagram

Quickly understand overall system functionality.



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Design Guide

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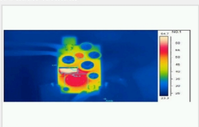

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Design Files

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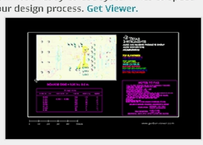

Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP11090.2
Vin (Min) (V)	20
Vin (Max) (V)	28
Vout (Nom) (V)	5
Iout (Max) (A)	.02
Output Power (W)	.1
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Linear Regulator

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
TLV704	24-V Input Voltage, 150-mA, Ultralow IQ Low-Dropout Regulators	Linear Regulator (LDO)	Sample & Buy	View Design Kits & Evaluation Modules
UCC28710	Constant-Voltage, Constant-Current PWM Controller with Primary-Side Regulation	Offline and Isolated DC/DC Controllers and Converters	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TLV704	SOT (DBV) | 5	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
PMP11090 Test Results		PDF	1663	26 Aug 2015	20	✓

Design files (6)

Title	Abstract	Type	Size (KB)	Date	Views
PMP11090 Gerber		ZIP	362	26 Aug 2015	8
PMP11090 Altium		ZIP	513	26 Aug 2015	12
PMP11090 PCB		PDF	595	26 Aug 2015	8
PMP11090 Assembly Drawing		PDF	66	26 Aug 2015	10
PMP11090 BOM		PDF	126	26 Aug 2015	12
PMP11090 Schematic		PDF	139	26 Aug 2015	33

Applications

- Circuit Breaker - Power Circuit Breaker (LV/MV)

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