

17.5W Dual USB Car Charger Reference Design

{ACTIVE} PMP9367

Description & Features

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Description

PMP9367 is a dual USB car charger reference design intended for use in aftermarket automotive application. This design utilizes the LM3150, TPS2561 Dual Channel Power Switch and a TPS2513 USB Dedicated Charging Port Controller. This design operates from 6 to 40V in. The outputs is set to 5V, channel one has a 1A current limit and channel two has a 2.1A current limit. This design has a switching frequency of 300 kHz.

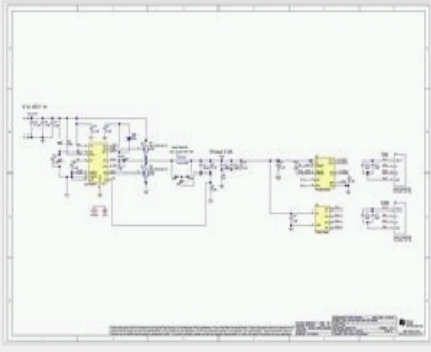
Features

- Small overall solution size.
- +5V/3.5A with LM3150 capable of 6V to 40V input
- Synchronous Controller provides 95% peak efficiency
- Constant On Time Control, No Loop Compensation Required, and Fast Transient Response
- Emulated Ripple Mode (ERM) control allows for the use of low ESR output capacitors.

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Schematic/Block Diagram

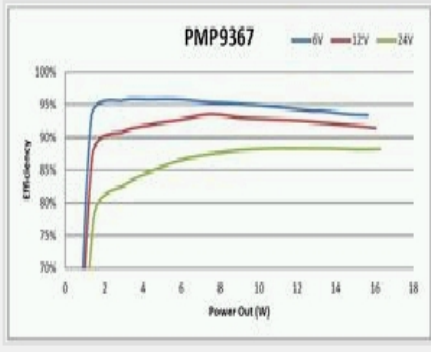
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Test Data

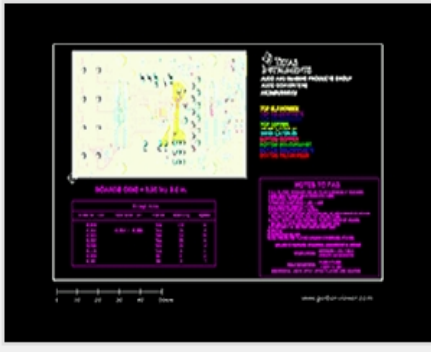
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Design Files

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP9367
Vin (Min) (V)	6
Vin (Max) (V)	40
Vout (Nom) (V)	5
Iout (Max) (A)	3.5
Output Power	17.5
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Buck- Synchronous

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
LM3150	SIMPLE SWITCHER® CONTROLLER, 42V Synchronous Step-Down	Controller (External Switch)	Sample & Buy	View Design Kits & Evaluation Modules
TPS2513	USB Dedicated Charging Port Controller	USB Power and Charging Port Controllers	Sample & Buy	View Design Kits & Evaluation Modules
TPS2561	Dual Channel Precision Adjustable Current-Limited Power Switches	USB Power and Charging Port Controllers	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package Pins	CAD File (.bxl)	STEP Model (.stp)
LM3150	HTSSOP (PWP) 14	Download	Download
TPS2561	VSON (DRC) 10	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](#)

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Technical Documents

User guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9367 Test Results		PDF	1611	15 Apr 2015	256

Design files (5)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9367 Gerber		ZIP	234	15 Apr 2015	64
PMP9367 PCB		PDF	784	15 Apr 2015	99
PMP9367 BOM		PDF	115	15 Apr 2015	86
PMP9367 Schematic		PDF	266	15 Apr 2015	318
PMP9367 CAD Files		ZIP	1144	15 Apr 2015	72

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