Reference Design - TPS2490, 12Vout 60A Hotswap using TI's CSD17570Q5B NexFETs

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Description

This circuit is a hot swap design using the TPS2490 hot swap controller with power limiting and two 30V CSD17570Q5B NexFETs. The system can be used in security servers to give the ability to plug-in line cards when the system is up and running. Constant current start-up using dV/dt control is implemented to keep the inrush current between 1-A and 2-A.

Circuit can sit inside a line card side.

Vin = 12V, ILoad = 60A

Reference Design - TPS2490, 12Vout 60A Hotswap using TI's Gen 1.4 NexFETs

Features

- Completed design and tested
- Reference design for server applications
- Features 30V, 0.56mohm (typical at 10V Vgs) CSD17570Q5B in 5x6mm QFN

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

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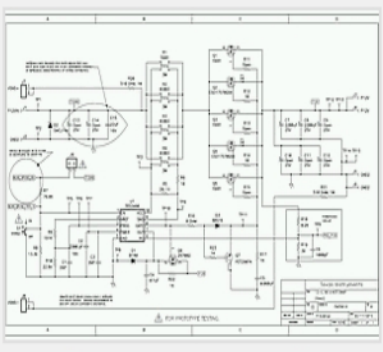
Schematic/Block Diagram

Quickly understand overall system functionality.



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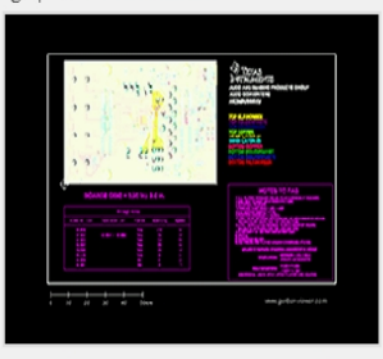

Download Design Files

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

Parametrics

	PMP9616
Vin (Max) (V)	14
Vin (Min) (V)	10
Vout (Nom) (V)	12
Iout (Max) (A)	60
Output Power	720
Isolated/Non-Isolated	Non-Isolated
Input Type	DC
Topology	Hot Swap

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
CSD17570Q5B	30-V, N-Channel NexFET Power MOSFET, CSD17570Q5B	Power MOSFET	Sample & Buy	Not Available
TPS2490	Latchable Positive High-Voltage Power-Limiting Hot Swap Controller	Hot Swap Control, Protection and Monitoring	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
TPS2490	VSSOP (DGS) | 10	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.

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9616 Test Results		PDF	486	13 Jan 2015	5

Design Files (4)

Title	Abstract	Type	Size (KB)	Date	Views
PMP9616 Gerber		ZIP	221	13 Jan 2015	3
PMP9616 Assembly Drawing		PDF	21	13 Jan 2015	3
PMP9616 BOM		PDF	234	13 Jan 2015	3
PMP9616 Schematic		PDF	51	13 Jan 2015	8

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