

6-A Synchronous Buck Converter with Minimal External Components

Status: PREVIEW

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PMP2942

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Description

The TPS40140 is a dual synchronous buck controller that can be used for a two-phase single output or for two independent outputs. The controller has an input voltage rating of 4.5 to 15 V for the chip VCC and 2 to 40 V for the power stage. It will work in many applications with 5, 12 and 24 V inputs. The controller can also accept input voltages from two different sources. Current mode control uses the inductor DCR to minimize impacts on the efficiency. A current sense resistor could be used for improved accuracy. Additionally, the chip features a 700 mV reference with better than 1 % accuracy over temperature. This circuit uses the TPS40140 in the dual synchronous buck configuration. A buck is typically used when the output voltage is always lower than the input voltage. Key considerations for this design are low output noise and synchronized switching. The TPS40140 provides a CLK IO pin that can be connected between devices to create up to 16 phases that are optimally shifted. The converter in this case is 5 V to 2.5 V @ 2 A and 3.3 V to 1.2 V @ 4 A.

What's Included

- SLUR003, TPS40190DRC Bill of Materials
- SLUR004, TPS40190DR Schematic
- SLUL025, TPS40190DRC Test Report

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Part Number	Status	Price (US\$)
PMP2942: Dual Synchronous Buck Converter Stackable Up to 16 Phases	PREVIEW	

Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
PMP2942 TEST RESULTS		PDF	107	18 Jan 2011	42

More Literature (2)

Title	Abstract	Type	Size (KB)	Date	Views
PMP2942 REVB BILL OF MATERIALS		PDF	20	18 Jan 2011	11
PMP2942 REVB SCHEMATIC		PDF	38	18 Jan 2011	11

Related Products

TI Devices (1)

Part Number	Name	Product Family
TPS40190	Low Pin Count Synchronous Buck DC/DC Controller	DC/DC Controller (External Switch)

Support and Community

Customer Tags

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