# SIMPLE SWITCHER®
Synchronous Regulator Series

TEXAS INSTRUMENTS

Synchronous design made easy

The LM4360x and LM4600x are the first fully synchronous family of SIMPLE SWITCHER converters with up to 60V input capability and a high light-load efficiency architecture. Load currents of up to 3A are supported for the 36V devices, and up to 2A for the 60V devices. Each device is available in a pin- and footprint-compatible HTSSOP-16 package, offering scalability benefits and simplifying design reuse.

Due to a unique pin configuration, all can easily be laid out to exhibit excellent radiated EMI performance. It's even easy to determine which device to use with a simple part numbering scheme so you can quickly match your requirements. As with all SIMPLE SWITCHER devices, these are fully supported by WEBENCH® design tools with all of the latest features, like Schematic Editor and PCB Export.

Step-Down (Buck)
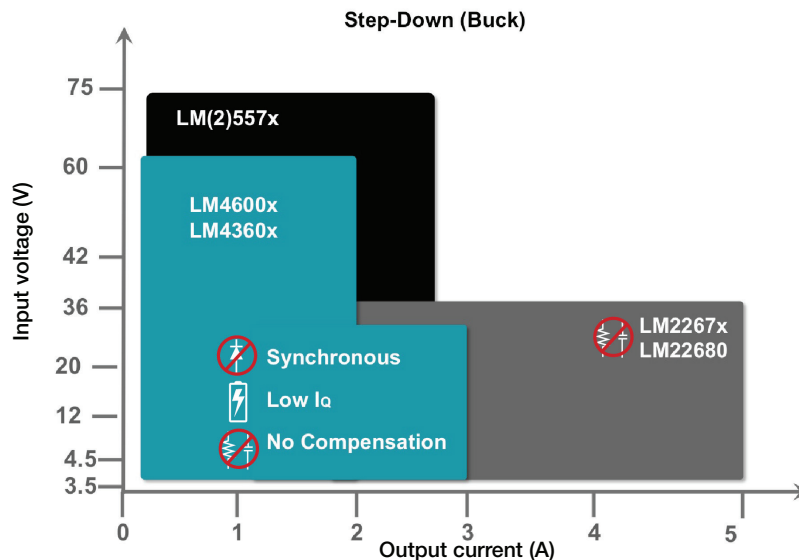
Part Number	V_{IN} Range (V)	I_{OUT} (A)	AECQ100
LM43600	3.5 to 36	0.5	√
LM43601	3.5 to 36	1	√
LM43602	3.5 to 36	2	√
LM43603	3.5 to 36	3	√
LM46000	3.5 to 60	0.5	√
LM46001	3.5 to 60	1	√
LM46002	3.5 to 60	2	√

LM 4 VV II

4: Synchronous SIMPLE SWITCHER feature set
- Fully synchronous
- Low quiescent current
- Power Good
- Precision Enable
- Internal compensation

Max operating input rail
36: $36V_{IN}$
60: $60V_{IN}$

Output current
00: 500 mA
01: 1A
02: 2A
03: 3A

Example: LM43603
4: Synchronous family
Max V_{IN}: 36V
I_{OUT}: 3A

SIMPLE SWITCHER®

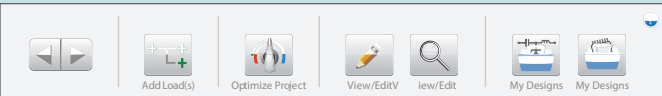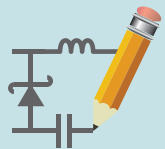# Synchronous Regulator Series

Design Resources

WEBENCH Design Tools

Use popular WEBENCH design tools to create complete power systems in seconds and optimize your design for efficiency, size, and cost. Get instant access to the latest simulation models, parametric data, and packages and download designs directly to your CAD environment. The easy-to-use tools allow you to make value-based tradeoffs at a design, system, and supply chain level before your design is committed to production.

Get more information on WEBENCH tools, including demo videos and tutorials at **ti.com/webench**

Reference designs
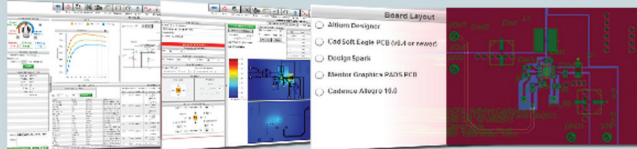
- PMP9398: CISPR 25 Class 5-rated design for LM46002
- PMP9456: Battery charger reference design with LM46001
- PMP9450: LM2592HV TO-220 upgrade with LM46002
- PMP9454: PTN78060W module replacement with LM43603
- PMP9379: Positive/negative output design with LM46002
- PMP9080: Automotive USB charging with LM43603
- PMP9462: Triple output industrial design with LM43603 and LM26420
- PMP9483: Triple output industrial power supply with LM43603 and LMZ10501

Instructional Videos

- Loop compensation made simple lab demo
- PCB thermal management lab demo
- Layout tips for EMI reduction lab demo
- Auto front-end protection lab demo
- Synchronous regulator family overview video
- Most interesting engineer video
- PCB export for synchronous regulators training presentation
- Wide VIN multi-rail power made simple
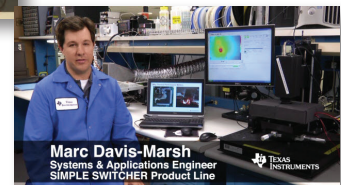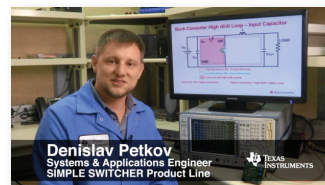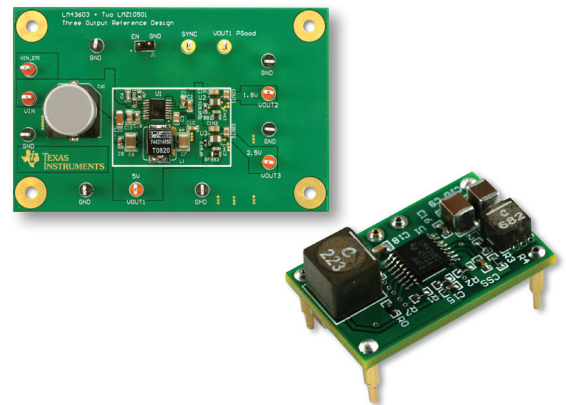
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