

Automotive Power Management Solutions

National Semiconductor offers a diverse portfolio of regulators, controllers, LDOs and references to address the many design challenges involved with powering automotive applications. National's best-in-class, low I_q products and PowerWise® solutions accommodate automotive systems with high-efficiency needs, while LDOs and frequency adjustable switchers allow designers to avoid EMI problems. National's extensive power management portfolio includes products with wide-input voltage ranges and a rich selection of features to enhance automotive system robustness and design flexibility.

Online WEBENCH® design tools allow designers to quickly select, design, and simulate their power management solutions. Other automotive power tools such as reference designs, application notes, and design webinars are also available to simplify the design process.

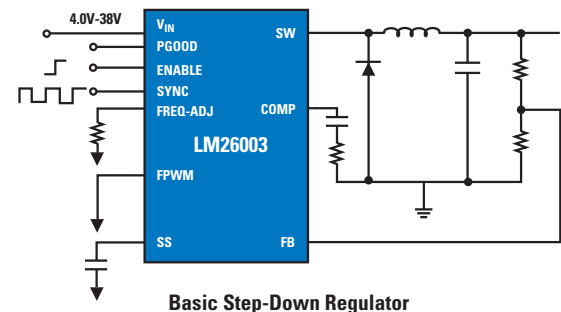
Features and Benefits

- **Cold Crank and Load Dump:** wide-input range allows survival at high transients and operation at low voltages
- **Electromagnetic Interference:** adjustable and synchronizable frequency products avoid interference with AM band
- **High Efficiency:** PowerWise® products and synchronous converters with over 90% efficiency

LM26001/03 – PowerWise® 1.5A/3A Buck Regulators Deliver Industry-Leading Low Quiescent Current

Features

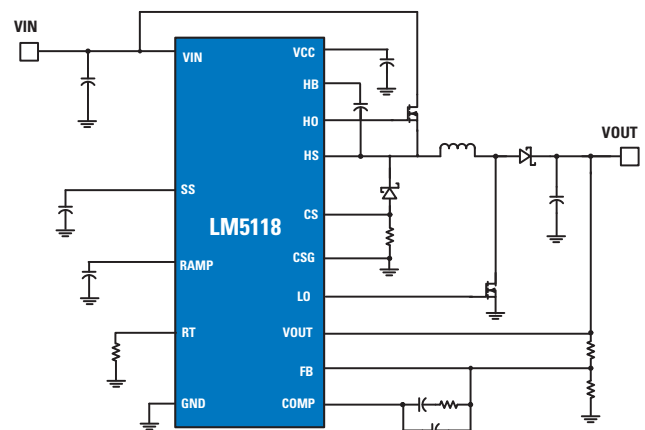
- Ideal for automotive always-on-electronic and battery preservation
- High-efficiency sleep mode ($40 \mu\text{A } I_q \text{ typ.}$)
- $10 \mu\text{A}$ in shutdown mode
- 3V cold-crank compatibility
- 4V to 38V continuous input range
- 1.5% reference accuracy
- Frequency synchronization
- Low-input version: LM26001B (4.8V to 18V)



LM5118 – Wide-Voltage Range Buck-Boost Controller

Features

- Ultra-wide input voltage range from 3V to 75V
- Emulated peak current mode control
- Smooth transition between step-down and step-up modes
- Switching frequency programmable to 500 kHz
- Oscillator synchronization capability
- Internal high-voltage bias regulator
- Integrated high- and low-side gate drivers
- Programmable soft-start time
- Ultra-low shutdown current
- Enable input wide bandwidth error amplifier
- 1.5% feedback reference accuracy
- Thermal shutdown



See all National's automotive products and solutions at: national.com/automotive

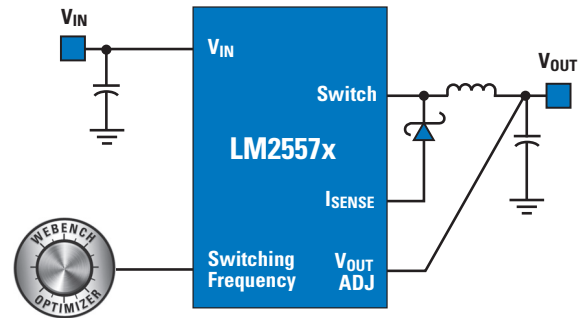


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LM2557x – PowerWise® SIMPLE SWITCHER® Auto-Grade Regulator Family

New Emulated Current Mode (ECM) SIMPLE SWITCHER Family Features

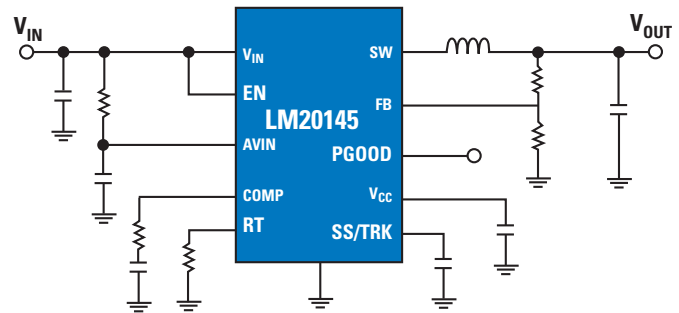
- A family of pin-to-pin compatible, AECQ grade 0 and 1 products
- Available in die and packaged versions
- Fully supported with WEBENCH® design/simulation tools
- High V_{IN} to low V_{OUT} step-down ratios
- Superior transient response
- Fast design, guaranteed performance and flexibility



LM20xxx – PowerWise® Family of High-Efficiency, Full-Featured Synchronous Buck Regulators

Features

- Feature-rich family of high-efficiency synchronous regulators
- Internal FETs
- Supports adjustable frequencies of 250 kHz to 1.5 MHz (low-voltage devices), and 300 kHz to 750 kHz (high-voltage devices)
- Precision enable
- External soft-start
- Power good
- Pre-biased start-up



Highest Power Density 5A Regulators

Power Management Automotive-Grade Solutions

Description	Device	V_{IN} (V)	V_{OUT} (V)	I_{OUT} (A)	Package Name	AEC Q100 Temp Grade
Buck controller	LM3489	4.5 to 35	1.24 to V_{IN}	—	MSOP-8	1
Non-synchronous buck regulators	LM2734x	3 to 20	0.8 to 18	1	TSOT23-6	1
Non-synchronous buck regulators	LM2734Z	3 to 20	0.8 to 18	1	LLP-6	1
Non-synchronous buck regulator	LM283x	3 to 5.5	0.6 to 4.5	1 to 2	SOT23-5	1
Boost, buck-boost controller	LM3478	2.95 to 40	1.26 to 40	—	MSOP-8	1
Boost, buck-boost controller	LM3488	2.95 to 40	1.25 to 40	—	MSOP-8	1
Sequencer	LM3880	2.7 to 5.5	—	—	SOT23-6	1
High-voltage step-down switching regulator	LM5010A*	6 to 75	—	1	MSOP-8	0
SOT23 boost converter	LM2735x	2.7 to 5.5	3 to 24	—	SOT23-6	1

* Coming soon

See all National's automotive products and solutions at:

national.com/automotive

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