



World's Smallest 4A Dual Point-of-Load Regulator from Semtech Dramatically Reduces Size and Inventory Challenges in Power Conversion Applications

SC286 Combines Two Buck Regulators and 225 Combinations of Voltage Options in One Tiny 4 x 4 x 0.6mm Package

CAMARILLO, Calif.--(BUSINESS WIRE)-- Semtech Corp. (Nasdaq: SMTC), a leading supplier of analog and mixed-signal semiconductors, today announced the latest device in its buck [regulator](#) platform. The new [SC286](#) is the world's smallest 4A, dual-channel regulator for point-of-load (POL) applications. It combines two step-down regulators each with 15 preset output voltages controlled by four on-chip voltage identification (VID) pins, all in an ultra-small, low-profile 4 x 4 x 0.6mm package enabling a compact, overall design footprint of less than 200mm². This combination of features lets designers optimize power conversion to support more features in less space without the inventory challenges associated with using multiple regulators.

Regulators are used in nearly all electronic products to take electricity from the power source and convert it to the various voltages needed by all the system components (microprocessor, touch buttons, temperature monitor, etc.). Traditional buck regulators necessitate designing in and qualifying many different parts to accommodate all of the possible voltage variations. The SC286 consolidates these requirements down to just one tiny integrated circuit.

The SC286 supports output currents up to 4A per channel, along with very high power conversion efficiency (up to 95%), low shutdown current (1µA typ.), automatic power save for high light-load efficiency, and excellent transient response. The combination of ultra-small size, high efficiency and high performance makes this device an ideal solution for powering a wide range of loads, including analog-to-digital converters, microcontrollers, DSPs and digital ASICs in networking, communications, consumer, industrial and office automation equipment, including router and network cards, printers and LCD TVs.

"The SC286 enables designers to source one device for multiple sockets. A total of 15 different output voltages from each of two on-chip regulators equates to 225 preset output voltage combinations controlled by one extremely small power management chip. This dramatically simplifies design, qualification and ongoing inventory management for our customers," said Alan Burchfield, Senior Product Marketing Manager for Semtech's Power Management Group. "It also helps them minimize overall system size even as they continue to add more and more functions. No other supplier comes close to matching two 4A regulators in such a small package."

The SC286 further simplifies power supply design by integrating the regulator, loop compensation components, power MOSFETs and MOSFET drivers on one chip. This eliminates the need for external loop stabilization components and programming resistors, making component selection and layout much easier, while contributing to the small design footprint.

The SC286 is packaged in a low-profile, thermally enhanced 4 x 4 x 0.6mm MLPQ 28-pad package. For applications requiring one regulator, the SC186 offers the same performance, with a single output.

Key Features of SC286

- V_{IN} : 2.9V to 5.5V; V_{OUT} : pin-programmable 0.8V to 3.3V
- World's smallest 4A dual POL regulator: 28-pad MLPQ package, 4 x 4 x 0.6mm
- Works with very small chip inductors enabling an ultra-compact, <200mm² solution footprint
- Integrated VID pins to pin-select output voltages or for dynamic voltage scaling (DVS)
- 1.6MHz switching frequency
- Efficiency up to 95%
- Fast transient response

Applications

Cable Modem: [Switching Regulators](#)

GPON - Gigabit Capable Passive Optical Network: [Switching Regulators](#)

HDTV: [Switching Regulators](#)

Laser Printer: [Switching Regulators](#)

Notebook PC: [Graphics Memory Controller](#), [I/O Controller Hub](#), [Peripheral Power](#)

Router and Switch: [Switching Regulators](#)

Set Top Box: [Switching Regulators](#)

Wireless Base Station: [Low Current Power](#), [System Control Processor](#)

Wireless Node B: [Low Current Power](#), [System Control Processor](#)

Pricing and Availability

The SC286 is available immediately in production quantities and is priced at \$3.36 each in 3,000-piece lots. The ordering code is SC286ULTRT. Evaluation boards (SC286EVB) are also available. Semtech offers comprehensive design assistance, including field- and factory-based support. Data sheets, volume pricing, and delivery quotes, as well as evaluation kits and samples, are available at <http://www.semtech.com/info>.

About Semtech

Semtech Corporation is a leading supplier of analog and mixed-signal semiconductors for high-end consumer, computing, communications and industrial equipment. Products are designed to benefit the engineering community as well as the global community. The company is dedicated to reducing the impact it, and its products, have on the environment. Internal green programs seek to reduce waste through material and manufacturing control, use of green technology and designing for resource reduction. Publicly traded since 1967, Semtech is listed on the NASDAQ Global Select Market under the symbol SMTC. For more information, visit <http://www.semtech.com>.

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