SC185

4A Synchronous Step-Down Regulator

POWER MANAGEMENT

Features

- V_{IN} Range: 2.9 – 5.5V
- V_{OUT} Options: 1.0V to 3.3V
- Up to 4A Output Current
- Ultra-Small Footprint, <1mm Height Solution
- 1.5MHz Switching Frequency
- Optional Power Save Mode Operation
- Efficiency Up to 95%
- Low Output Noise Across Load Range
- Excellent Transient Response
- Start Up into Pre-Bias Output
- 100% Duty-Cycle Low Dropout Operation
- <1µA Shutdown Current
- Externally Programmable Soft Start Time
- Power Good indicator
- Input Under-Voltage Lockout
- Output Over-Voltage, Current Limit Protection
- Over-Temperature Protection
- 3mm x 3mm x 0.6mm thermally enhanced MLPQ-UT16 package
- -40 to +85°C Temperature Range
- Pb-free, Halogen free, and RoHS/WEEE compliant

Applications

- Desktop Computing
- Set-Top Box
- LCD TV
- Network Cards
- Printer

Description

The SC185 is a 4A synchronous step-down regulator designed to operate with an input voltage range of 2.9V to 5.5V. The device requires only three external filter components for a complete a step down regulator solution. The output voltage is factory predetermined with an available range of 1.0V to 3.3V.

The SC185 is optimized for maximum efficiency over a wide range of load currents. During full load operation, the SC185 operates in PWM mode with fixed 1.5MHz oscillator frequency, allowing the use of small surface mount external components. As the load decreases, the regulator has the option to transition into Power Save mode maintaining high efficiency or stay in forced PWM mode operation.

The SC185 offers output short circuit and thermal protection to safe guard the device under extreme operating conditions. The enable pin provides on/off control of the regulator. When connected to logic low, the device enters shutdown and consumes less than 1uA of current. Other protection features include programmable soft start with Power Good indicator, over voltage protection and under voltage lockout.

The SC185 is available in a thermally-enhanced, 3mm x 3mm x 0.6mm MLPQ-UT16 package and has a rated temperature range of -40 to +85°C.

Typical Application Circuit