

High-Efficiency 5.5V 2A Synchronous Buck Converter with Low Quiescent Current in SOT563 Package

1 Descriptions

SC8105 is a high-efficiency synchronous buck converter with few external components and is easy to use in compact applications. The device operates with input voltages from 2.3V to 5.5V with a typical switching frequency of 2.2MHz and supports output voltage from 0.6V to V_{IN} . It integrates power MOSFETs and can support up to 2A load current. SC8105 can operate in 100% duty cycle to offer a low input to output voltage differential when the V_{IN} is equal to V_{OUT} .

The device also features low quiescent current and PSM mode operation to maximum efficiency at light load. With PSM mode and low quiescent current during standby or light load, the device can further prolong battery life and is suitable for battery-powered applications.

The device adopts a constant on-time control mode with internal compensation which features excellent load transient performance and supports low equivalent series resistance output capacitors such as ceramic (MLCC) capacitors.

SC8105 provides protections including input under-voltage protection, cycle-by-cycle peak current limitation, and thermal shutdown protection with auto-recovery.

SC8105 is available in SOT563-6 Package.

3 Applications

- Smart Phone
- STB, PC, Notebook, Server
- SSD, Memory Supply
- Battery-Powered Devices

2 Features

- Input Voltage Range: 2.3 V to 5.5V
- 0.6V Reference with $\pm 1\%$ Accuracy
- 10uA Low Quiescent Current
- Power Save Mode at Light Loads
- 2A Continuous Output Current Capability
- Integrated 100m Ω High-side and 70m Ω low-side MOS
- Ultra-fast Transient Response
- Optimized for Low-ESR Ceramic Output Capacitors
- Real 100% Duty Cycle
- 2.2MHz Typical Switching Frequency
- Internal Soft-Start
- EN Control Pin
- Output Discharge Function
- Cycle-by-Cycle Over Current Protection
- Thermal Shutdown Protection
- Under Voltage Protection
- Thermal Shutdown Protection
- SOT563-6 Package.

4 Device Information

| Part Number | Package | Dimension |
|-------------|----------|-----------------|
| SC8105SBER | SOT563-6 | 1.60mm x 1.60mm |