

High Efficiency, Synchronous 100V/1.2A Buck Converter with Low Quiescent Current

1 Descriptions

SC8171 is a synchronous buck converter with a wide input voltage range from 5V to 100V. With integrated both high-side and low-side power MOSFETs, the converter can achieve high efficiency without an external rectifier diode and can support up to 1.2A continuous load current. With sleep mode, pulse skips 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 that provides fast transient response and eases loop stabilization. It supports low equivalent series resistance output capacitors such as ceramic (MLCC) and specialty polymer capacitors without an external compensation circuit. The switching frequency can be programmed easily by an external resistor.

SC8171 integrates internal VCC bias supply to save external VCC capacitor. An open-drain PG indicator provides sequencing, fault indication, and output voltage monitoring.

SC8171 supports protections including input under-voltage protection, cycle-by-cycle peak/ valley current limitation, short circuit protection with hiccup mode, and thermal shutdown protection with auto-recovery

SC8171 is available in SOIC8EP Package.

3 Applications

- High Voltage Post Regulator
- E-Bikes, Power and Garden Tools
- Motor Drivers, Drones, Telecom
- Industry Power Supplies

2 Features

- Wide VIN Range: 5 V to 100V
- Up to 1.2A Continuous Output Current Capability
- 115uA Low Quiescent Current
- Adaptive Sleep Mode
- Integrate 500mΩ/240mΩ MOSFET
- High-Efficiency Buck Conversion
- On-time Extension During Dropout Mode
- COT Mode for Fast Load Transient
- Few External Components
- Up to 1MHz Adjustable Switching Frequency
- EN control and Programmable UVLO
- ±1% Feedback Voltage Accuracy
- Power Good Indicator
- Internal Soft Start
- Cycle-by-cycle Over Current Protection
- Output Short Circuit Protection with Hiccup
- Input Under Voltage Protection
- Thermal Shutdown Protection
- Compact SOIC8E package

4 Device Information

Part Number	Package	Dimension
SC8171SDER	ESOP8L	4.90mm x 3.90mm