20V Output , 16A Switching Current , Fully Integrated Synchronous Boost Converter with Programmable Input Current Limit

FEATURES

- Wide Input Voltage Range: 2.7V-20V
- Wide Output Voltage Range: 4.5V-20V
- Fully Integrated 10mΩ High Side FET and 6.5mΩ Low Side FET
- Programmable Input Current Limit Up to 15A
- Internal Peak Current Limit: 16A
- Typical Shut-down Current: 5uA
- Quiescent Current: 170uA
- Fixed 600KHz Switching Frequency
- Selectable PFM and FCCM at Light-load
- Parallel Mode
- External Soft Start and Compensation
- Output Overvoltage Protection
- Thermal Shutdown Protection
- QFN-13 3mm x 4mm Package

APPLICATIONS

- Bluetooth Audio
- Wireless Charger
- POS
- Lighting

DESCRIPTION

The SCT12A5 is a high efficiency synchronous boost converter with fully integrated a 10mΩ high-side MOSFET and a 6.5mΩ low-side MOSFET, supporting 2.7V to 20V input voltage range and up to 16A switching current. The input average current limit can be adjustable with an external resistor. SCT12A5 supports up to 30W of load power from a 1-cell battery with integrated low Rds_on power MOSFETs.

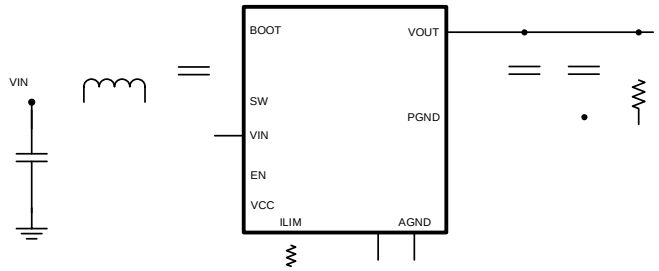
The SCT12A5 adopts constant off-time peak current control to provide fast transient response. An external compensation network allows flexibility setting loop dynamics to achieve optimal transient performance at different load conditions.

The SCT12A5 offers selectable PFM and FCCM in light load condition, and it also offers parallel mode for higher power application. The switching frequency is fixed 600KHz.

The SCT12A5 features output overvoltage protection and thermal shutdown protection when the device overloads.

The device is available in a QFN-13 3mm x 4mm package.

TYPICAL APPLICATION



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