

20A Fully Integrated Synchronous Boost Converter

Description

The MT5083 is a high efficiency fully integrated synchronous Boost converter with built-in main switch and synchronous switch. The device has 20A switch peak current capability and provides output voltage up to 30V. Synchronous rectification increases efficiency, reduces power losses and eases thermal requirements, allowing the MT5083 to be used in high power step-up applications. The 2.7V to 30V input voltage range supports a wide range of battery and AC powered inputs. The 70µA no load quiescent current extends operating run time in battery-powered systems. The operating frequency can be externally set for a 50kHz to 1MHz range, as for operation mode:

- Mode pin: Low is automatic PSM/PWM mode.
- Mode pin: High is Forced PWM mode.

The MT5083 implements a programmable soft-start function, an adjustable cycle by cycle switching peak current limit function and thermal shutdown protection. The MT5083 is available in a small 22 pin 4mm×4mm QFN package.

Features

- MT5083: 2.7V to 30V Input Range
3V to 30V Output Voltage
- Integrated 30V Rating 12mΩ Main and Synchronous Power Switches with 20A Peak Current Capability
- Adjustable Input UVLO through EN pin
- Low Quiescent Current 70µA
- Low Shutdown Supply Current 3.5µA
- Resistor or Inductor DCR Current Sensing
- Adjustable Frequency from 50kHz to 1MHz
- Programmable Soft-start
- Programmable Mode
High: FPWM; Low: PSM/PWM
- Cycle-by-Cycle Current Limit
- Thermal Shutdown
- QFN4×4_22L Packages
- Pb-Free ROHS compliant

Application

- USB TypeC-PD and Thunderbolt Port for PCs
- Industrial Battery Powered POS Terminals
- Quick Charge Power Banks
- Electronic Cigarette
- Hi Power Bluetooth Speaker

Typical Application

