

DESCRIPTION

The TCS4525 is a high-frequency, high-current synchronous step-down dc-dc converter optimized to supply the different sub systems of smart-phones, Tablets, and portable applications powered by one cell Li-Ion or three cell Alkaline/NiCd/NiMH batteries. The device is able to deliver up to 6A, with programmable output voltage from 0.6 V to 1.4V.

The TCS4525 operates at 3-MHz fixed switching frequency which allows the use of small low cost inductors and capacitors. During light load conditions, the regulator includes a PFM mode to enhance light-load efficiency. The regulator transitions smoothly between PWM and PFM modes. Synchronous rectification and automatic PWM/PFM transitions improve overall efficiency.

The serial interface is compatible with Fast/Standard and High-Speed mode I²C specification allowing transfers at up to 3.4 Mbps. This communication interface is used for dynamic voltage scaling with voltage steps down to 6.25 mV, for reprogramming the mode of operation (PFM or Forced PWM) or disable/enabling the output voltage.

FEATURES

- 2.7V to 5.5V Input Voltage Range
- 3MHz Constant Switching Frequency
- 6A Available Load Current
- I²C Control Interface with Dynamic Voltage Scaling Support
- Programmable Output Voltage: 0.6V to 1.4V in 6.25mV Steps
- Small size, 0.22μH or 0.47μH Inductor Solution
- 52μA Typical Quiescent Current
- PFM/PWM Operation for Optimum Increased Efficiency
- Excellent Load and Line Transient Response
- Short Circuit and Thermal Protection
- Available in 2.0mm×1.6mm WCSP-20 Package
- RoHS Compliant and 100% Lead(Pb)-Free Halogen-Free

APPLICATIONS

- Smart Phones
- Tablets
- Low-Voltage DSPs and Processors Core Power Supplies

Typical Application Circuit

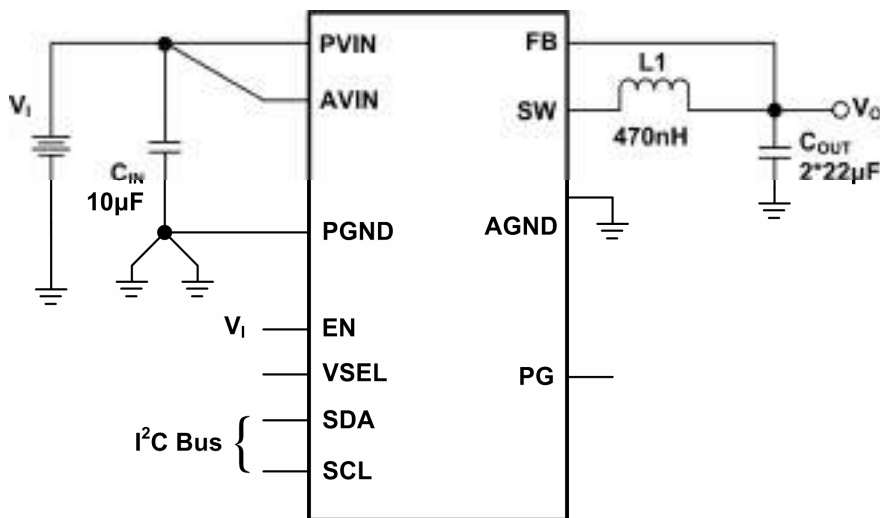


Figure 1.