Low Iq Single-Inductor and Dual Output for LCD Panel Bias Power Supply

Features

- Programmable Positive Output: 4.0 V to 6.5 V (0.1 V Steps)
- Programmable Negative Output: -4.0 V to -6.5 V (0.1 V Steps)
- Over 85% Efficiency at IOUT > 10 mA
- 1.5% Output Voltage Accuracy
- Under-Voltage Lockout (UVLO) Rising/Falling
- Wide Input Voltage Range, 2.7 V to 5.0 V
- Programmable Parameters via I²C Compatible Interface
  - . Output Voltages on Both Positive (OUTP) and Negative (OUTN)
  - . Active-Discharge
  - . 400 kHz Full-Speed I²C Interface
- 15-bump 1.23 mm x 2.03 mm (0.4 mm Pitch) WLCSP Package

Applications

- Smart Phones TFT LCD
- Portable Devices TFT LCD

Description

The SM5109 is designed to provide power supply with positive and negative output voltage driving TFT-LCD panels up to 10 inches. The device features programmable positive and negative output by an integrated boost converter, LDO and negative charge pump. It also features maximized efficiency by integrating synchronous rectification MOSFETs for the boost converter, LDO and negative charge pump. The device operates in single-cell Li-Ion, Ni-Li and Li-Polymer batteries with the input range of 2.7 V to 5.0 V. The SM5109 is available in a 15-bump, 1.23 mm x 2.03 mm (0.4 mm pitch) WLCSP package.

Device Information

Part	Package	Size
SM5109	15 WLCSP	1.23 mm x 2.03 mm

Simplified Block Diagram