

High Efficiency Power Supply for Small Size Displays

ISL98608

The ISL98608 is a high efficiency power supply for small size displays, such as smart phones and tablets requiring \pm supply rails. It integrates a boost regulator, LDO and inverting charge pump that are used to generate two output rails: +5.5V (default) and -5.5V (default). The \pm 5.5V output voltages can be adjusted from \pm 4.5V up to \pm 7V with 50mV steps using the I²C interface.

The device integrates synchronous rectification MOSFETs for the boost regulator and inverting charge pump, which maximizes conversion efficiency.

ISL98608 integrates all compensation and feedback components, which minimizes BOM count and reduces the solution PCB size to 18mm².

The input voltage range, high efficiency operation and also very low shutdown current make the device ideal for use in single cell Li-ion battery operated applications.

The ISL98608 is offered in a 1.744mm x 1.744mm WLCSP package, and the device is specified for operation across the -40°C to +85°C ambient temperature range.

Features

- Two outputs:
 - VP = +5.5V (default)
 - VN = -5.5V (default)
- 2.5V to 5V input voltage range
- \pm 4.5 to \pm 7V wide output range
- >89% efficiency with 12mA load between VP and VN
- 18mm² solution PCB area
- Fully integrated FETs for synchronous rectification
- Integrated compensation and feedback circuits
- I²C adjustable output voltages and settings
- Integrated VP/VN discharge resistors
- 1 μ A shutdown supply current
- Programmable turn on and turn off sequencing
- 1.744mm x 1.744mm, 4x4 array WLCSP with 0.4mm pitch

Applications

- TFT-LCD smart phone displays
- Small size/handheld displays

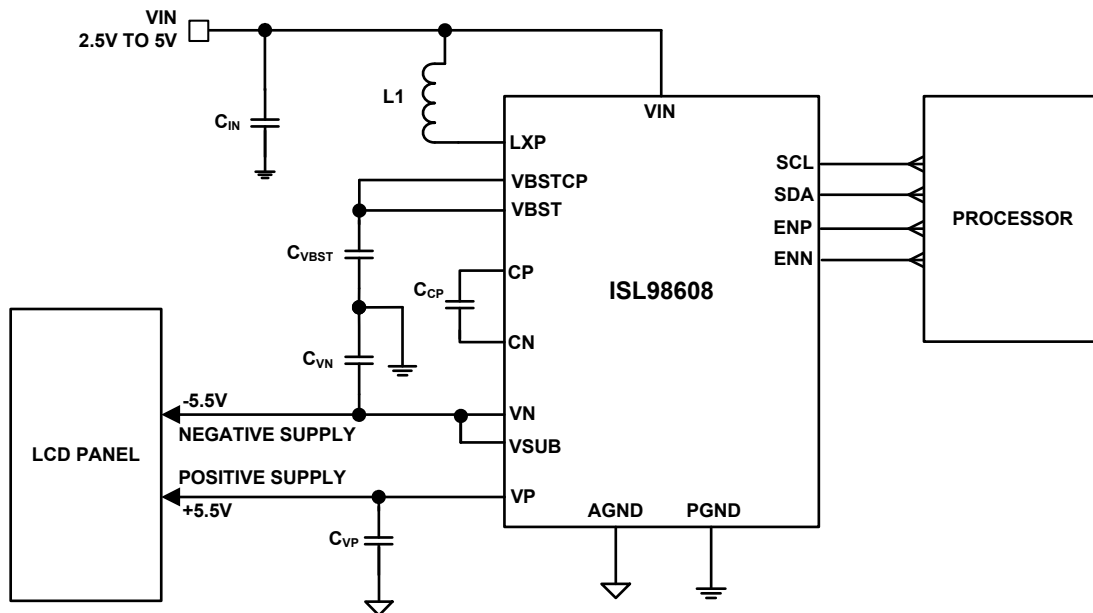


FIGURE 1. TYPICAL APPLICATION CIRCUIT: TFT-LCD SMART PHONE DISPLAY

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