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ISL98607

High Efficiency Power Supply for Small Size Displays

DATA SHEET



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KEY FEATURES

- Two outputs:
 - VP = +5.0V (default)
 - VN = -5.0V (default)
- 2.8V to 4.4V Input voltage range
- >85.5% Efficiency with 12mA load between VP and VN
- 21mm² 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
- 1μA shutdown supply current
- 1.82x2.15mm, 4x5 array WLCSP with 0.4mm pitch
- Pb-Free (RoHS compliant)

DESCRIPTION

The ISL98607 is a high efficiency power supply for small size displays, like smart phones, requiring $\pm$ supply rails. It integrates boost regulator, LDO, and inverting charge pump that are used to generate two output rails: +5V (default) and -5V (default). The $\pm$ 5V output voltages can be adjusted up to $\pm$ 5.7V 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.

ISL98607 integrates all compensation and feedback components, which minimizes BOM count and reduces the solution PCB size to 21mm².

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 ISL98607 is offered in a 1.82x2.15mm² WLCSP package, and the device is specified for operation over the -40°C to +85°C ambient temperature range.

APPLICATIONS

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

TYPICAL DIAGRAM

ENLARGE +

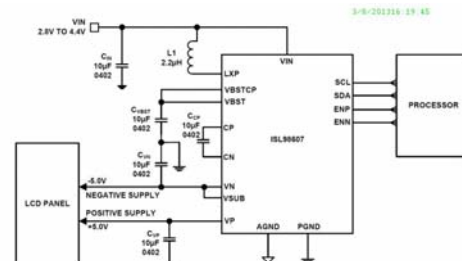


FIGURE 1. TYPICAL APPLICATION CIRCUIT: TFT-LCD SMART PHONE DISPLAY



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