ISL95906

Integrated Power Management IC for VR12.6™ Platforms

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The ISL95906 is a Power Management Integrated Circuit (PMIC) for ultrabook, notebook and tablet computers powered by 2-cell Li-ion batteries. It integrates control, MOSFET drivers, power MOSFETs, fault protection and fault monitoring functions for 8 highly efficient, synchronous buck regulators and VTT LDO. It is offered in a thermally efficient 5.5mmx5.5mm, 121 bump, 0.5mm pitch WLCSP package.

The PMIC regulators convert system voltage from the battery or adapter into all platform voltages needed for a typical computer system including 5V and 3.3V system regulators, 1.8V, 1.5V, 1.05V for controller-hub, peripheral and core voltages as well as programmable VDDQ and VTT regulators for DDR3/3U/3L, LPDDR3 and DDR4 voltages. The switching regulators operate at 1MHz and are based on Intersil's proprietary R4™ Technology, which provides high light-load efficiency, fast transient response, seamless DCM/CCM transitions and requires no external compensation.

The PMIC provides overcurrent, overvoltage and over-temperature fault protections and undervoltage and over-temperature warnings. A temperature alert signal indicates the PMIC is operating at an elevated temperature and ALERT indicates if any other fault or warning has occurred. The PMIC also offers significant I^2C capability and can be configured to provide 8 GPIO pins for additional system functionality and each regulator has an independent power-good indicator.

Features

- Highly integrated power management IC
- Efficient 1MHz integrated FET switching regulators
- Internal compensation, no external compensation
- Computer system platform voltage regulators 5V, 3.3V, 1.8V, 1.5V, 1.05V
- Programmable VDDQ and VTT regulators for memory (DDR3/L/U, LPDDR3 and DDR4)
- Extensive fault protection
  - Overcurrent protection
  - Over-temperature protection
  - Overvoltage and undervoltage protection
  - Temperature alert signal
- Independent power-good indicator for each regulator
- Independent enable signals for each regulator for maximum sequencing flexibility
- Low power consumption mode for connected standby
- I^2C bus allows system fault monitoring, enable control and configurable GPIO programming
- Output voltage offset programming through I^2C
- Configuration pin provides additional system programming options

Applications

- Ultrabook, notebook and tablet computers

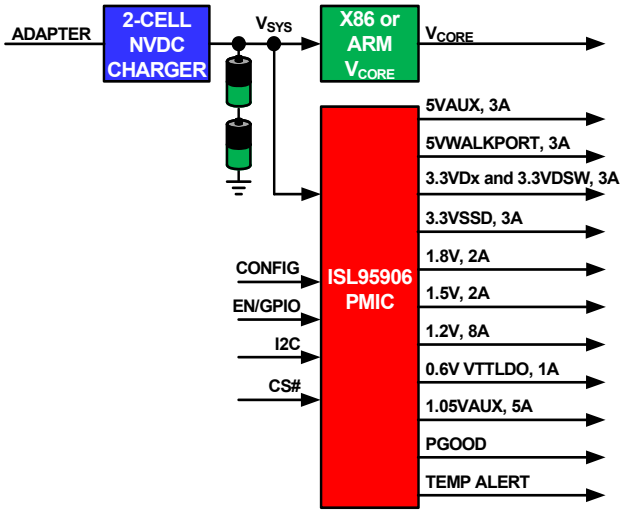

FIGURE 1. COMPUTER SYSTEM POWER MANAGEMENT SOLUTION

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