

X-Powers AXP809

PMIC for multi-core high-performance system

Battery management and Regulators



Revision 1.0

Overview

AXP809 is a highly integrated PMIC targeting at single cell Li-battery(Li-ion or Li-polymer)applications that require multi-channel power conversion outputs. It provides an easy and flexible power management solution for multi-core processors to meet the increasingly complex and accurate requirements on power control.

AXP809 comes with an adaptive USB3.0-compatible Flash Charger that supports up to 94% efficiency and 2.2A charge current. It also supports 20 channels power outputs (including 5-CH DCDC, with efficiency up to 95%). To ensure the security and stability of the power system, AXP809 provides multiple channels 12-bit ADC for voltage/current/temperature monitor and integrates protection circuits such as OVP,UVP,OTP,OCP. Moreover, AXP809 features a unique E-Gauge™ system, making power gauge easy and exact.

In addition, AXP809 embraces a fast interface for the system to dynamically adjust output voltage and set the work mode so that the battery life can be extended.

AXP809 features an IPS (Intelligent Power Select) circuit to transparently select power path among USB, external adapter, Li-battery, and system load, making it possible for the system to work normally when only external input power is available.

AXP809 is available in 8mm x 8mm x0.75mm 68-pin QFN package.

Features

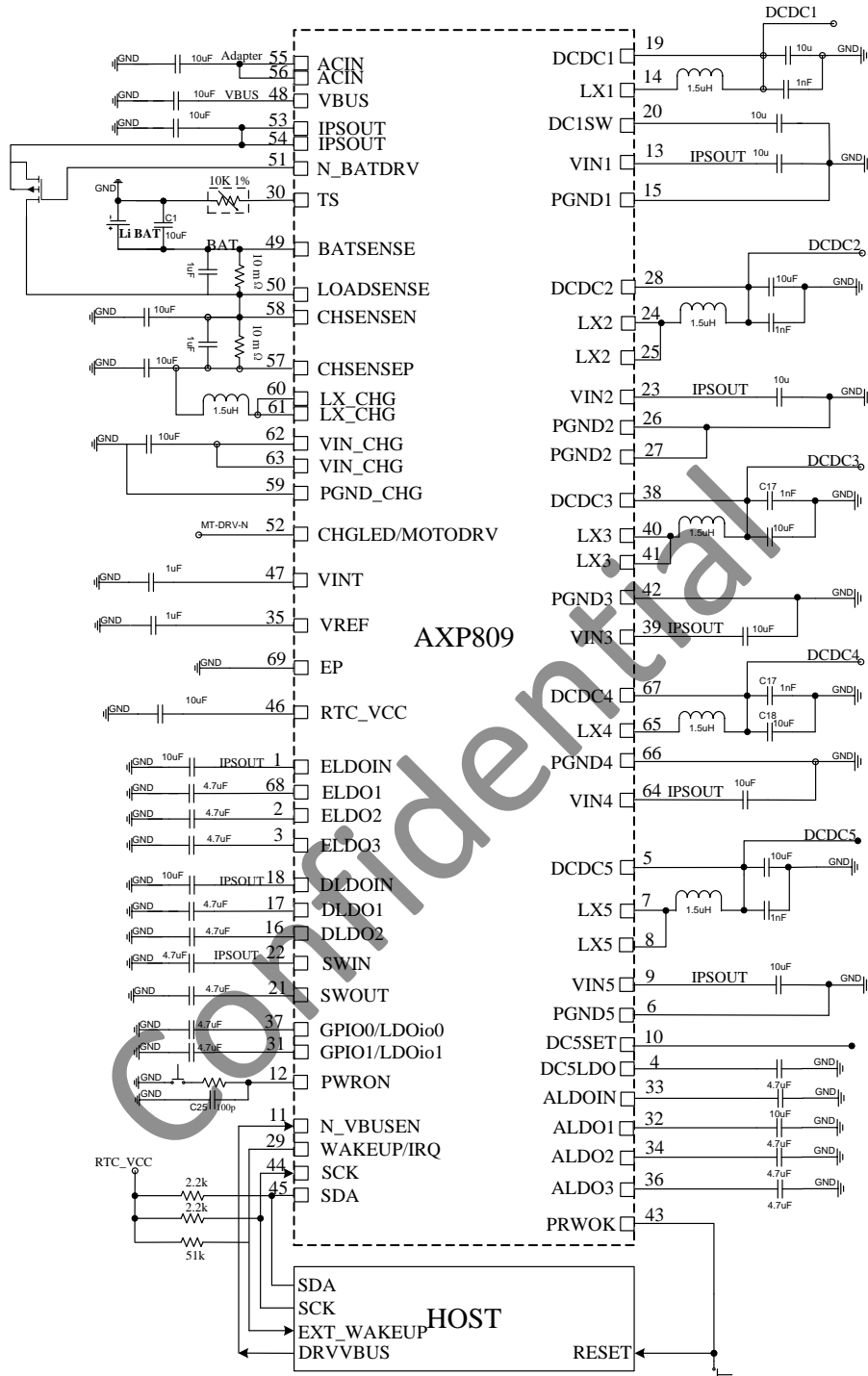
IPS	<ul style="list-style-type: none">• Input Range: 2.9V~6.3V (AMR:-0.3V~11V)• Three input: Battery/VBUS/Adapter
Flash Charger	<ul style="list-style-type: none">• Intergrated MOSFET support up to 2.2A• Support Battery temperature sensor• Support 4.1V/4.2V/4.24V/4.35V Battery• Hardware controlled charge flow
LDO	<ul style="list-style-type: none">• RTC_LDO: 100mA, always on• ALDO1/2: Range 0.7V~3.3V, 100mV/step, 300mA• ALDO3: Range 0.7V~3.3V, 100mV/step, 200mA• LDOIO0/1: Range 0.7V~3.3V ,100mV/step, 100mA• DLDO1: Range1 0.7V~3.4V, 100mV/step, Range2 3.4V~4.2V, 200mV/step 400mA• DLDO2: Range 0.7V~3.3V, 100mV/step, 100mA• ELDO1: Range 0.7V~3.3V, 100mV/step, 400mA• ELDO2/ELDO3: Range 0.7V~3.3V, 100mV/step, 200mA• DC5LDO: Range 0.7V~1.4V, 100mV/step, 200mA

Features (Continued)

Switches	<ul style="list-style-type: none"> • DC1SW: Rds(on) 100mΩ, input fixed to DCDC1 • SWOUT: Rds(on) 100mΩ, input from SWIN • CHGLED: 100mA open drain NMOS, for motor driver or charge indication
5 DCDCs	<ul style="list-style-type: none"> • DCDC1: Range 1.6V~3.4V, 100mV/step, 1.4A • DCDC2: Range 0.6V~1.54V, 20mV/step, 3A, VRC(Voltage ramp control) • DCDC3: Range 0.6V~1.86V, 20mV/step, 3A, VRC • DCDC4: Range1 0.6V~1.54V, 20mV/step; Range2 1.8V~2.6V ,100mV/step, 0.6A • DCDC5: Range 1.0V~2.55V ,50mV/step, 2A
E-Gauge™	<ul style="list-style-type: none"> • Internal dual-mode high precision gauge system • Easy mode compliant with most batteries • Exact mode for the specified battery(2%) • Low power warning • Chip temperature information
Interface	<ul style="list-style-type: none"> • High speed RSB(Reduced Serial Bus) • Flexible IRQ management
Management	<ul style="list-style-type: none"> • Software reset and hardware reset support • Hardware power off support • External power detect • Protection (OVP/UVP/OCP/OTP)
Integration	<ul style="list-style-type: none"> • Internal high precision reference 0.5% • Integrated regulator MOSFET

Confidential

Typical Application



29/44/45PIN pull high to RTC_VCC, 10 PIN IF Connet to VINT, DCDC5 OutPut Voltage is 1.35V; 10 PIN IF Connet to GND, DCDC5 OutPut Voltage is 1.5V ; 10 PIN is Floating, DCDC5 OutPut Voltage is 1.2V;



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