

DA9052 Flexible system PMIC with high efficiency USB power manager

General Description

The DA9052 is a highly integrated PMIC subsystem with supply domain flexibility to support a wide range of application processors, associated peripherals and user interface functions.

Combined with a switched-mode DC input/USB compatible charger, full power path management and multiple sleep modes the device offers an energy-optimised solution suitable for portable handheld, wireless and infotainment applications.

Interfacing directly to a Li-Ion/Polymer battery pack the high efficiency switching charger supports precise current/voltage charging as well as pre charge and USB modes without processor interaction. During charging the die temperature is thermally regulated enabling higher capacity batteries to be rapidly charged at currents up to 1.25A with minimum thermal impact to space-constrained PCB's.

USB suspend mode operation is supported and for robustness the USB power inputs are internally protected against over-voltage conditions.

The autonomous power path controller seamlessly detects and manages energy flow between an AC adaptor, USB cable and battery whilst maintaining USB power specification compliance.

The internally-generated system power rail supports power scenarios such as instant-on with a full discharged battery. A reverse-protected backup battery charger is also integrated into the power path function.

The power efficiency and flexibility of the switching input stage is maintained to the generated supplies. Controlled by a programmable digital power manager the 14 user-programmable switched/linear regulators may be configured for a variety of start up sequences, levels and timings.

For optimal processor energy-per-task performance dynamic voltage scaling is permissible on up to five supply domains. Dialog's patented Smart Mirror™ dynamic biasing is implemented on all linear regulators.



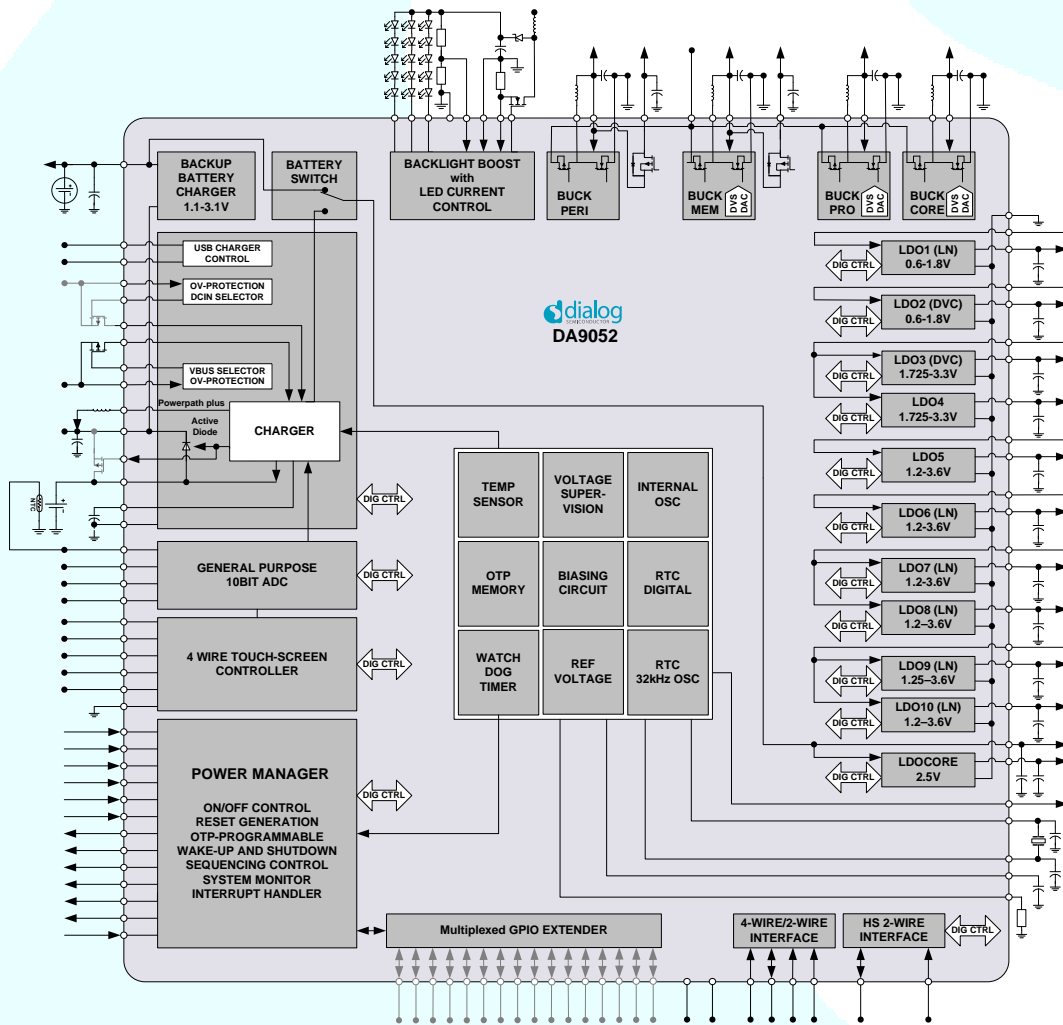
Available in an 86LD UFNBA-QFN 7x7mm package

Features

- Switched DC/USB Charger with power path management
- 4 DVS Buck Converters 0.5V-3.6V up to 1Amp
- 10 Programmable LDO's High PSRR, 1% accuracy.
- Low power Backup Charger 1.1-3.1V up to 6mA
- 32kHz RTC Oscillator
- General Purpose ADC with touch screen interface
- High voltage White LED driver 24V/ 50Ma Boost, 3 strings
- 16 bit GPIO bus for enhanced wakeup and peripheral control
- Dual serial control interfaces
- Unique ID code capability with OTP memory

Applications

- Personal Media Players
- Smart phone Headsets
- Personal Navigation devices
- Consumer Infotainment devices



DA9052 Block Diagram

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