

DA9024

DA9024 Quad 1.2A Buck PMIC with Audio Drivers

The DA9024 is a quad buck 1.2A per channel PMIC with 20 linear regulators, an integrated, class-G, true-ground capless headphone driver, and a class D speaker driver, enabling supply domain flexibility to support associated peripherals and user interface functions.

Controlled by a programmable digital power manager the user-programmable switched and linear regulators have configurable startup sequences, levels and timing. For optimal processor energy-per-task performance dynamic voltage scaling is available on four supply domains.

All linear regulators use Dialog's Smart Mirror™ dynamic biasing technique which maintains high performance over a wide range of operating conditions and a power saving mode (Sleep Mode) to minimize the quiescent current.

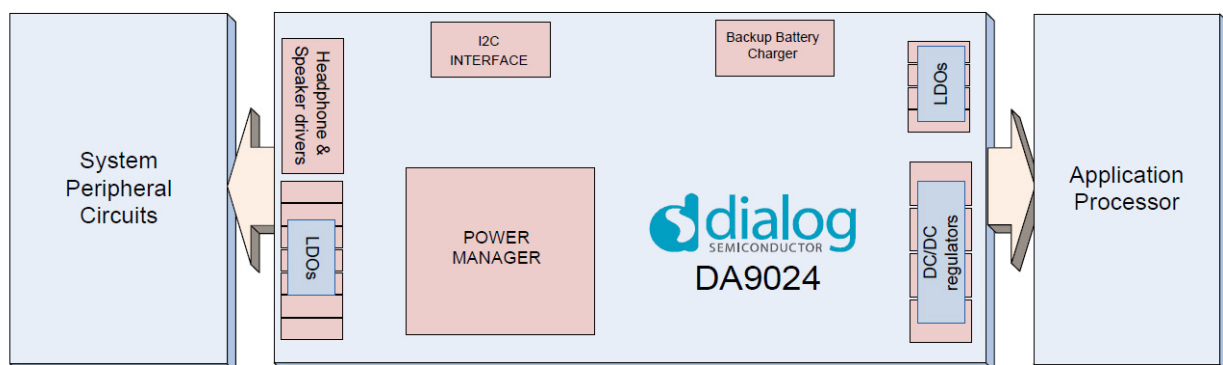
The regulators have output voltages independently programmable via the device control interface.

The buck converters do not require external Schottky diodes and offer a sleep mode (PFM mode) for optimal efficiency at low load currents. All converters use a high switching frequency (2MHz) allowing the use of small 2.2uH external inductors.

A backup battery charger and an ultra-low power real-time-clock (RTC) are also implemented on the IC.

The DA9024 contains a class-G true-ground “capless” headphone driver and a Class D Speaker driver, with Power-Limiter, along with two differential or four single ended input channels with analog routing/mixing.

The DA9024 is controlled by a bidirectional I2C interface and can operate in Standard Mode (up to 400kHz) and High Speed Mode (up to 1.7Mhz) allowing for a highly flexible configuration of end applications.



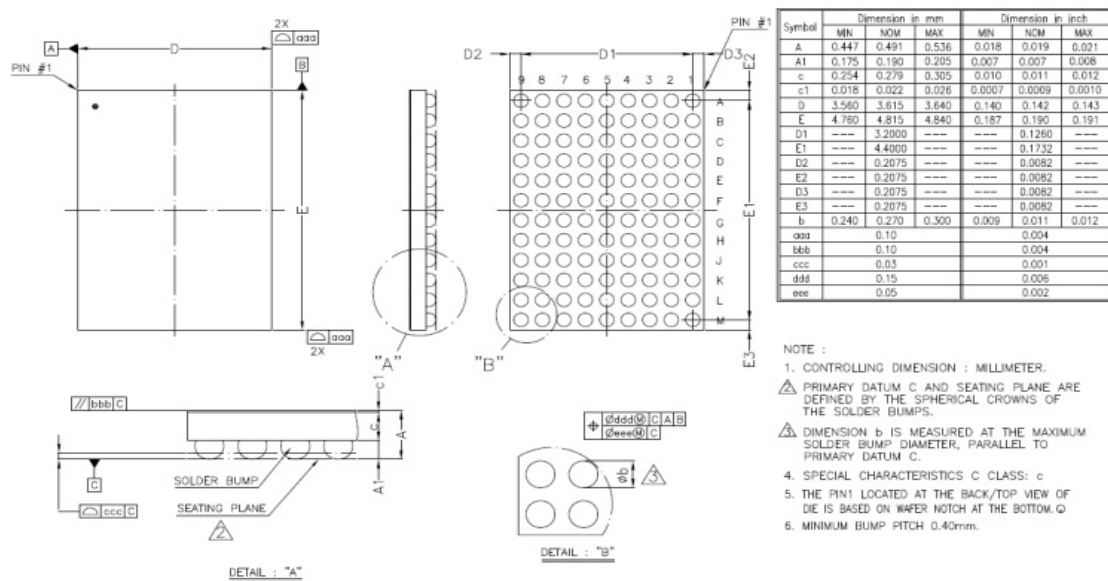
Features

- ▶ 4 x high efficiency programmable buck converters with DVC and pin controlled states
- ▶ 20 programmable LDO regulators
- ▶ 4 input Audio mixer with Capless 45mW Class G headphone and 1.5W (8Ohms) Class D speaker drivers
- ▶ High speed I2C interface
- ▶ Back up battery charger
- ▶ Ultra-low power (<1 μ A) 32kHz Real Time Clock with alarm wakeup capability
- ▶ Temperature / voltage supervision
- ▶ Package : 108bump WL-CSP 3.6mm x 4.8mm – 0.4mm pitch

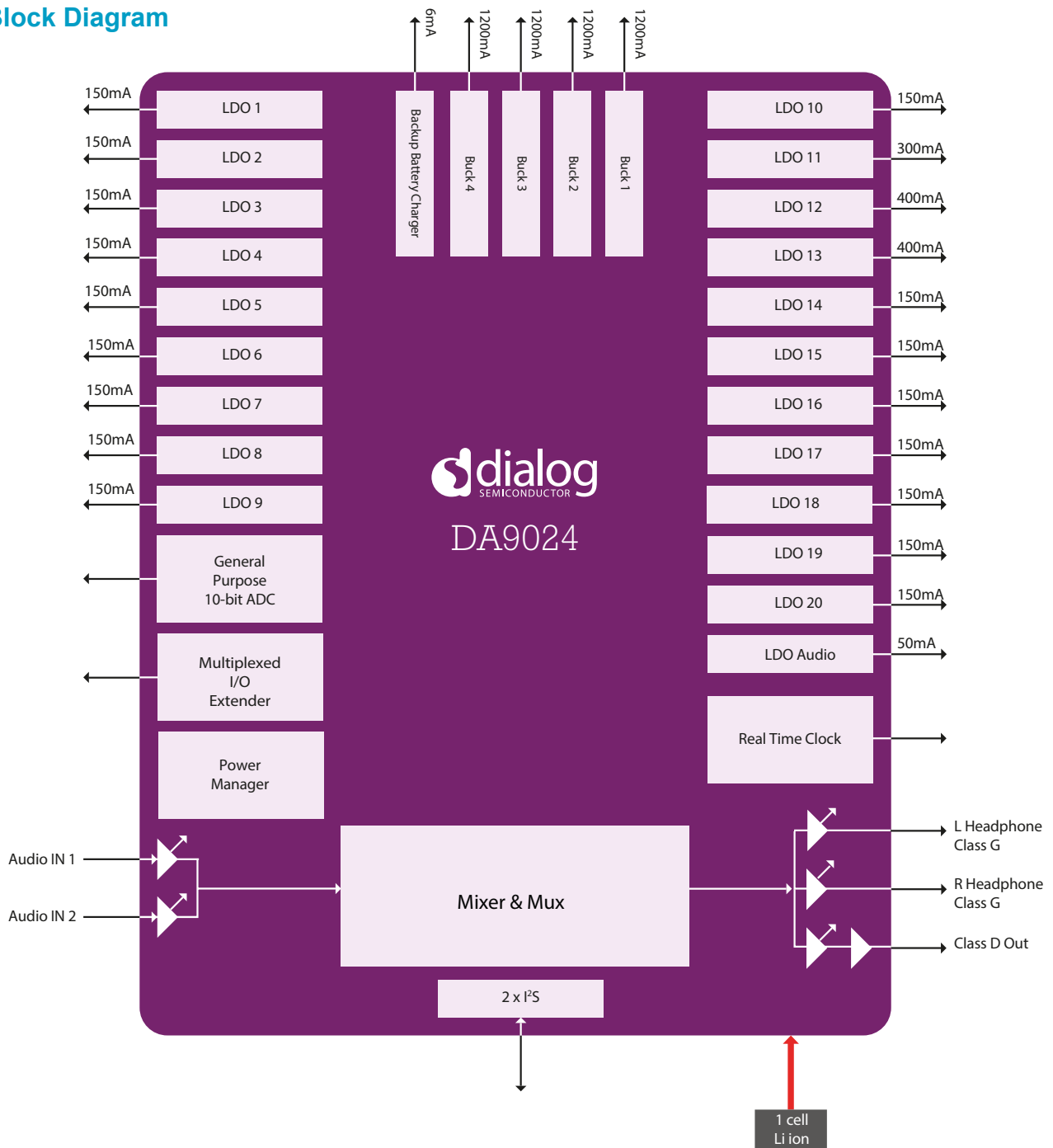
Applications

- ▶ Smartphone Handsets
- ▶ Consumer Infotainment Devices
- ▶ Embedded products

Package Outline Drawing



Block Diagram



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