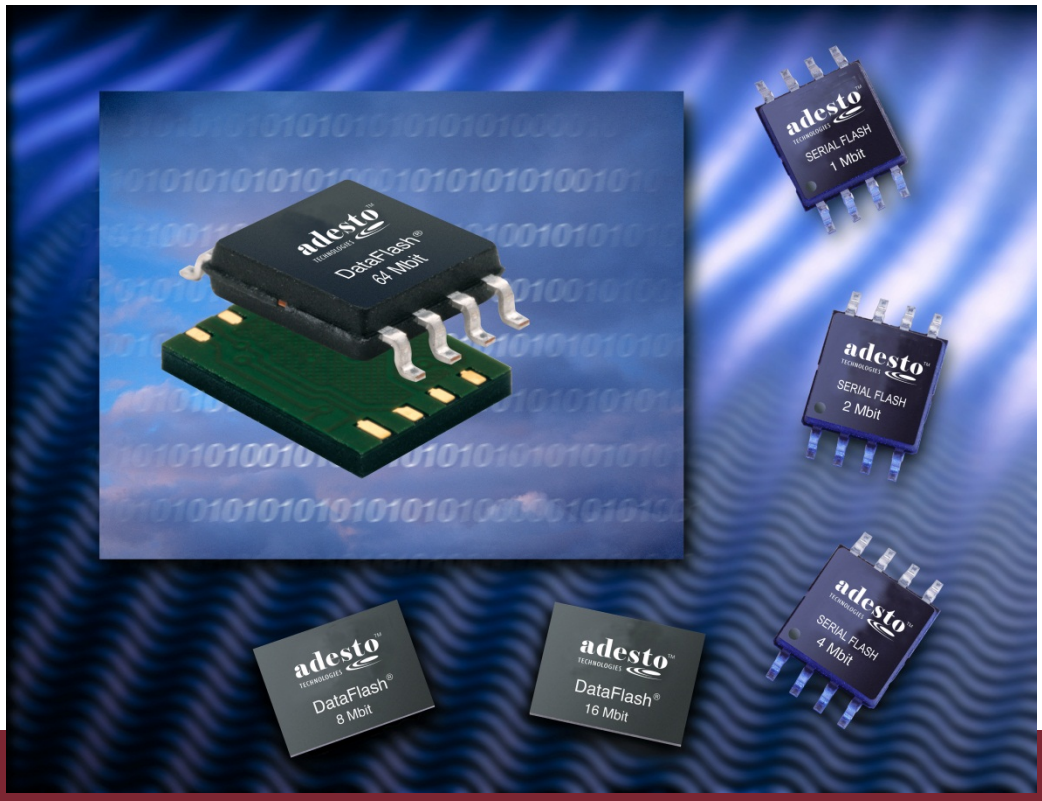
adesto™
TECHNOLOGIES



Adesto Serial Flash Memory Products

Adesto Technologies is a leading developer of non-volatile memory solutions based in Sunnyvale, California (USA). Its product portfolio includes Serial Flash and Conductive Bridge RAM (CBRAM®) memory technology. CBRAM is an ultra-low power, CMOS compatible non-volatile memory that is customized for a wide range of discrete and embedded markets. In 2012, Adesto acquired Atmel® Corporation's Serial Flash and DataFlash® product lines, commonly used for code and data storage. Sales from these product lines rank in the top five worldwide in Serial Flash revenue. For more information, visit: www.adestotech.com.

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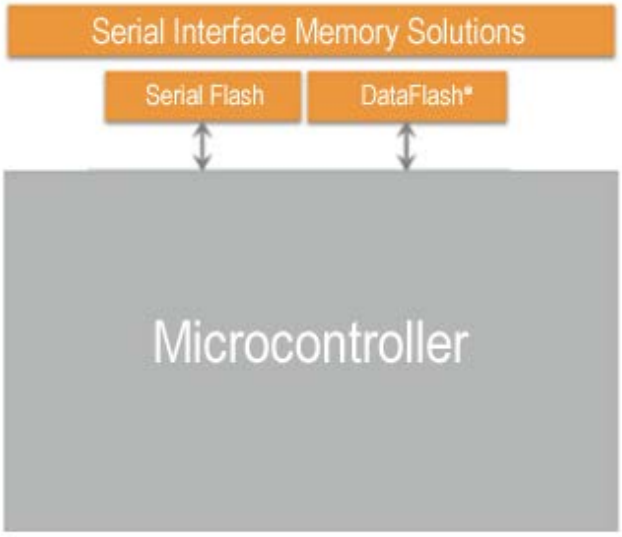


Adesto Serial Interface Memory Solutions

Flexible Solutions for Code and Data Storage
The Adesto portfolio of serial memory solutions gives you the freedom to choose the serial memory that best meets your specific application requirements. Adesto Serial Flash and DataFlash® can store any combination of boot code, application code, parametric data, and user data in every density from 1-Mbit to 64-Mbits. Whatever your nonvolatile memory needs may be, Adesto offers the right solution for your next design.

Adesto DataFlash

The Adesto AT45DBxxx DataFlash devices offer uniform page erase size as small as 256 bytes. This provides the user with the ability to perform completely self-contained, read-modify-write operations with minimal system overhead and management. The devices feature a common, but extensive command interface and an 8-pin compatible footprint for easy migration from 1-Mbit to 64-Mbit densities. The Adesto-programmed unique ID number, user-programmable sector protection, and permanent sector locking along with the page erase capability and integrated, fully independent SRAM buffers enable you to utilize a single, very low pin-count memory device for all of your nonvolatile memory needs in terms of data storage, code shadow or combined applications.

With the current 2.7V and 2.5V minimum voltage options and 2.3V and 1.65V minimum versions in development, DataFlash devices align well with current and future ASIC and SoC technologies. The DataFlash family was developed for flexibility, performance, and ease-of-use and can help drive your system cost reduction initiatives.

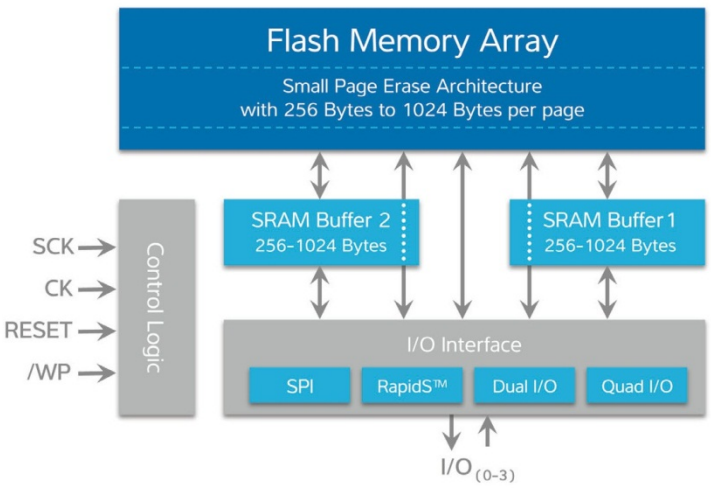
Key Features

- 1-Mbit to 64-Mbit densities
- Small page array architecture
- Individually erasable pages of 256/264, 512/528, or 1024/1056 bytes each
- Dual on-chip, independent SRAM buffers
- SRAM buffer size equal to memory page size
- Command-rich instruction set
- Enhanced low-power read
- Zero-power shutdown options
- Software reset capability
- 66 MHz+ SPI, Dual-I/O, and Quad-I/O support
- Individual sector protection and lockdown
- 128-byte OTP security register
- 100,000 cycles per page minimum
- JEDEC manufacturer and device ID standard

Advantages

- Granular page sizes offer greater flexibility than block erase architectures
- Command-rich instruction set allows for a smaller software footprint and lower CPU overhead
- Enhanced permanent and nonvolatile sector protection schemes simplify your system safeguards
- Enhanced nonvolatile sector protection options simplify system protection
- SRAM buffers and byte write capability allow true E²PROM emulation
- SRAM buffers can be used as an additional system resource (extra SRAM)
- Quad I/O and Dual I/O capability improves data transfer rates and execute-in-place (XIP) operation
- Additional power modes provide better energy management options
- Advanced Erase Suspend Resume command functions deliver ultimate read-write-write (RWW) flexibility when programming or erasing

DataFlash



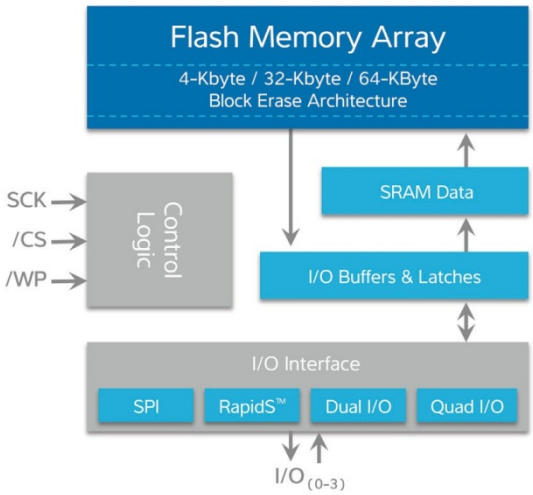
Adesto Serial Flash

The Adesto AT25DFxxx Block Erase Serial Flash family features variable-sized page programming in which any number of bytes from a full page down to a single byte can be programmed in one operation. Densities currently range from 512-Kbits to 64-Mbits. To increase system performance while minimizing system pin count, AT25DFxxx Serial Flash devices feature clock speeds up to 100MHz and support SPI, Dual-I/O and Quad-I/O interfaces. The individual sector protection and sector lockdown schemes of the AT25DFxxx devices allow flexibility in protecting vital code and/or data including critical boot routines, whether located in the top, bottom, or any part of the array. Voltage options include 1.65V, 2.3V, and 2.7V minimum devices to help improve battery life, minimize voltage rails, and reduce LDO and level-shifter requirements and costs.

Key Features

- Block erase sizes of 4KB, 32KB and 64KB, as well as full chip erase
- 512-Kbit to 64-Mbit densities in production
- Variable-sized page program allows programming 1 to 256 bytes at a time
- 1.65V, 2.3V and 2.7V minimum Vcc voltage range options
- 100 MHz+ SPI, Dual-I/O, and Quad-I/O support
- Individual sector protection and lockdown
- 128-byte OTP security register
- 100,000 program/erase cycles per block
- JEDEC manufacturer and device ID as standard

Block Erase Serial Flash



Advantages

- Low-voltage operation optimizes battery life and eliminates extra regulators and supply rails
- Enhanced nonvolatile sector protection options simplify system protection schemes
- Quad I/O and Dual I/O capability improves data transfer rates and execute-in-place (XIP) operation
- Advanced Erase Suspend Resume command functions deliver ultimate read-write-write (RWW) flexibility when programming/erasing

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