Code Storage Solutions for the Connected World

"Fusion" wide-voltage range, ultra-low power memory technology enabling next generation solutions for consumer, communication, mobile and industrial applications

As modern electronics evolve, the need for new low density, low energy code storage memory devices has emerged to meet the needs of mobile, wearable, and industrial applications in a connected world.

To address these issues, Adesto introduces the AT25DF Fusion series; a new family of wide-voltage range, ultra-low power Enhanced Serial Flash memory products combining industry standard sector sizes and read/write commands with new features such as wide Vcc (1.65V-3.6V), "ultra-deep power down" mode, and page erase capability.

Targeted for wearable, mobile, and other energy conscious applications, the new memory can extend the life of battery-operated devices such as Bluetooth low energy (BLE) products, DECT ULE (Ultra Low Energy), ZigBee RF4CE, Z-Wave and other Wi-Fi and Wi-Fi Direct applications.

Fusion Serial Flash: Features and Benefits

- **Wide Vcc operating range extends system battery life without sacrificing performance (Vcc Range 1.65-3.6V)**
- **Ultra deep power down operates at <200nA significantly reducing system standby power**
- **Page erase enables faster programming and updates**
- **Advanced security functions and embedded serial numbers provide effective anti-tamper and traceability options**

For more information on Adesto's ultra-low power code and data storage solutions, please visit: www.adestotech.com

Fusion Serial Flash

Density	Vcc Range	Speed (MHz)	Ultra-Deep Power Down	Page Erase Capability	Enhanced Security Features
256-Kbit	1.65-3.6V	104	✓	✓	✓
512-Kbit	1.65-3.6V	104	✓	✓	✓
1-Mbit	1.65-3.6V	104	✓	✓	✓
2-Mbit	1.65-3.6V	104	✓	✓	✓
4-Mbit	1.65-3.6V	104	✓	✓	✓

Applications: Program code shadow and storage for wearable, mobile, Bluetooth low energy and other energy conscious designs.

Features

- Single 1.65V - 3.6V Supply
- Serial Peripheral Interface (SPI) Compatible
    - Supports SPI Modes 0 and 3
    - Supports Dual Output Read
- 85MHz Maximum Operating Frequency
    - Clock-to-Output (tV) of 6 ns
- Flexible, Optimized Erase Architecture for Code and Data Storage Applications
    - Uniform 256-Byte Page Erase
    - Uniform 4-Kbyte Block Erase
    - Uniform 32-Kbyte Block Erase
    - Full Chip Erase
- Hardware Controlled Locking of Protected Sectors via WP Pin
- 128-Byte Programmable OTP Security Register
- Flexible Programming
    - Byte/Page Program (1 to 256 Bytes)

- Fast Program and Erase times
    - 1.5ms Typical Page Program (256 Bytes) Time
    - 50ms Typical 4-Kbyte Block Erase Time
    - 400ms Typical 32-Kbyte Block Erase Time
- Automatic Checking and Reporting of Erase and Program Failures
- Software Controlled Reset
- JEDEC Standard Manufacturer and Device ID Read
- Low Power Dissipation
    - 200nA Ultra Deep Power Down (Typical)
    - 5µA Deep Power-Down (Typical)
    - 25uA Standby current (Typical)
    - 5mA Active Read Current (Typical)
- Endurance: 100,000 Program/Erase Cycles
- Industry Standard Green (Pb/Halide-free/RoHS Compliant) Package Options
    - SOIC, DFN and TSSOP Packages

Description

The Adesto® AT25DF series is designed for use in a wide variety of high-volume consumer based applications in which program code is shadowed from Flash memory into embedded or external RAM for execution.

With a wide voltage range of 1.65V to 3.6V the new AT25DF Fusion Serial Flash family not only uses less power during standard operation but also offers designers the ability to operate over the full Vcc range of the battery -- maximizing on-board energy reserves and eliminating the need for external regulators. The ultra-deep power down mode allows devices to function with a class leading standby current of 200 nanoamps, an order of magnitude improvement over standby modes available today. The devices also include a page erase feature for faster programming and updates.

Adesto Technologies is a leading supplier of value-added semiconductor solutions for code and data storage. Its product portfolio includes DataFlash®, Fusion Serial Flash, Mavriq™ and Moneta™ serial memory products. Adesto is based in Santa Clara, California (USA). For more information, visit http://www.adestotech.com.