

# Low power, fast data-logging SPI Flash

Universal memory with expandable feature set

## AT25XE Series D

FusionHD™ memory class for faster data-logging and reduced system cost

**5x** *Up to*  
*faster* / **70%** *Up to*  
*less power*

Conditions of each test sequence: 24 bytes programmed (sequential pattern) into each of 320 consecutive pages

### Faster, Lower Power

In data-logging tests the AT25XE Series D used 70% less power and operated 5x faster than other wide Vcc flash devices, making it ideal for next-generation battery powered IoT devices.

### Wide Vcc - Reduces Cost and Protects Data

AT25XE Series D operates over a wide voltage range, eliminating voltage regulators to reduce system cost and ensure data can be safely saved even at the lowest battery voltage levels.

### Data-logging or Code Storage

AT25XE Series D combines the advantages of standard flash and EEPROM for code storage and data-logging intensive applications.

### Small Page Erase

Traditional flash uses 4KByte block based erases that consume unnecessary power and take time to execute. The AT25XE Series D offers small page erase to speed up and save power for data-logging applications.

### Designed for IoT

The AT25XE Series D is the first flash memory specifically designed to meet the needs of next-generation IoT devices. It integrates a rich feature set that helps reduce CPU overhead and system power.

## Transform Your Design

### Ready to upgrade?

AT25XE Series D memory solutions are universally compatible with traditional flash devices and offer advanced features that can save money and transform your design

### Ultra-deep Power-down Mode

Integrated power management reduces the need for additional components and saves valuable microcontroller I/Os

### Active Interrupt

Signals an operation is complete allowing the CPU to focus on other activities or enter low power mode rather than checking status

### Automated Commands

Reduces CPU overhead by enabling a fire and forget scheme when saving or modifying data.

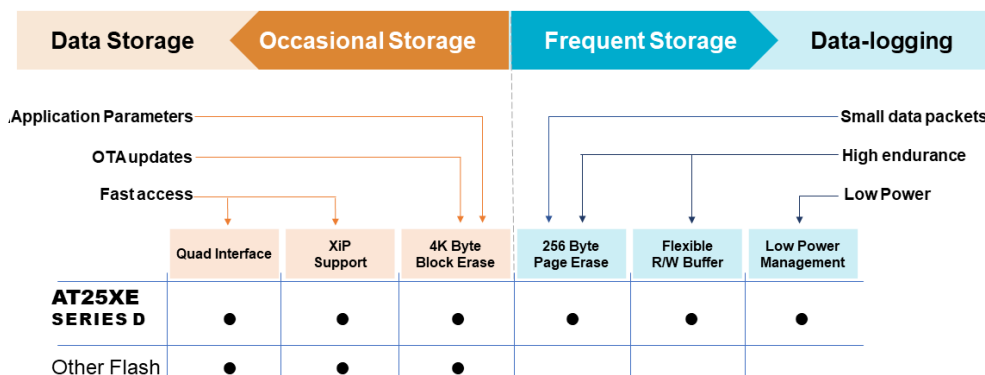
### Battery Health Monitor

Monitors battery health, detects low battery voltage and remaining charge

### Security Register

Use the lockable security registers to store unique information such as device ID, encryption key or UIDs / MAC and EUI addresses

Designed for data storage and the rigors of data-logging applications



The AT25XE family is our FusionHD class of flash memory that offers drop-in compatibility with industry flash and comes with a set of advanced features and architecture that reduce CPU overhead and system power, cost and size.

## Technical Specifications

Wide Vcc voltage operation (1.65V to 3.6V)	OTP security register
Ultra-deep power-down (7 nA)	Active Status Interrupt
Small page erase	Hardware and software reset
Program and erase suspend / resume	Flexible read / write buffer
Read Modify Write	JEDEC standard manufacturer and device ID
Full chip erase	Pb / Halide-free / RoHS compliant
Data retention >20 years	Endurance >100,000 program/ erase cycles
Flexible, optimized erase architecture for code and data storage applications	JESD216C Serial flash discoverable parameters (SFDP)
Interface : <ul style="list-style-type: none"> <li>• Single SPI</li> <li>• Dual IRQ</li> <li>• Quad IRQ</li> </ul>	Temperature range options: <ul style="list-style-type: none"> <li>• 40°C to +85°C (all devices)</li> <li>• 40°C to +105°C (select devices)</li> <li>• 40°C to +125°C (contact Dialog)</li> </ul>

## Applications

- Industrial IoT
- Building automation
- Wearables
- Consumer devices
- Data-logging
- OTA intensive applications
- Smart appliances
- Remote controls
- Network systems



Density	Product	Integrated Power Management	Low Power Operation	Burst Read Mode	Small Page Erase	Read-Modify-Write	Flexible Buffer Control	Active Interrupt	Battery Monitor
32Mbit	AT25XE321D	•	•	•	•	•	•	•	•
16Mbit	AT25XE161D	•	•	•	•	•	•	•	•
8Mbit	AT25XE081D	•	•	•	•	•	•	•	•
4Mbit	AT25XE041D	•	•	•	•	•	•	•	•
4Mbit	AT25XE041B	•	•		•				
2Mbit	AT25XE021A	•	•		•				
1Mbit	AT25XE011	•	•		•				
512Kbit	AT25XE512C	•	•		•				

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