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

Up to 5x faster / Up to 70% 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 unecessary 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 specically 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

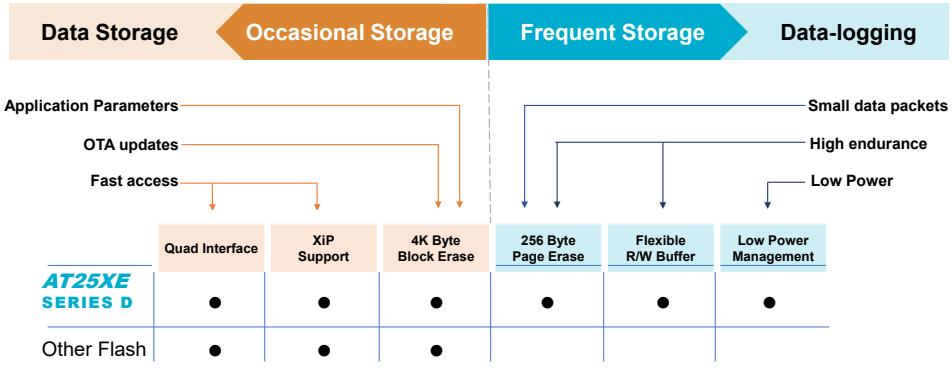
Active Interrupt
Signals an operation is complete allowing the CPU to focus on other activities or enter low power mode rather than checking status

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



RENESAS

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 : • Single SPI • Dual SPI • Quad SPI	

Applications

- Industrial IoT
- Building automation
- Wearables
- Consumer devices
- Data-logging
- OTA intensive applications
- Smart applicances
- 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	SFDP
32Mbit	AT25XE321D	•	•	•	•	•	•	•	•	•
16Mbit	AT25XE161D	•	•	•	•	•	•	•	•	•
8Mbit	AT25XE081D	•	•	•	•	•	•	•	•	•
4Mbit	AT25XE041D	•	•	•	•	•	•	•	•	•
4Mbit	AT25XE041B	•	•		•			•		
2Mbit	AT25XE021A	•	•		•			•		
1Mbit	AT25XE011	•	•		•					
512Kbit	AT25XE512C	•	•		•					